DOCUMENT RESUME

ED 198 744 FL 012 220

AUTHOR Hudelson, Sarah, Ed.
TITLE Learning to Read in Different Languages. Linguistics and Literacy Series: 1. Papers in Applied Linguistics.
INSTITUTION Center for Applied Linguistics, Washington, D.C.
REPORT NO ISBN-0-87281-118-2
PUB DATE Jan 81
NOTE 144p.
AVAILABLE FROM Center for Applied Linguistics, 3520 Prospect Street, N.W., Washington, DC 20007 ($7.95)

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS Adults; Bilingualism; Case Studies; Children; Contrastive Linguistics; Deafness; English; English (Second Language); Error Analysis (Language); German; Oral Reading; Polish; Psycholinguistics; *Reading; Reading Ability; *Reading Processes; Reading Research; Second Language Learning; Spanish; Vietnamese

ABSTRACT

The following papers on acquisition of reading skills are included: (1) "Miscue Analysis and Future Research Directions" (Goodman); (2) "Reading in Spanish: Insights from Children's Miscues" (Barrera); (3) "An Investigation of the Oral Reading Behaviors of Native Spanish Speakers Reading in Spanish" (Hudelson); (4) "A Study of Oral Reading in Polish and English: A Psycholinguistic Perspective" (Romatowski); (5) "Reading: A Universal Process" (Hodes); (6) "First Language Illiteracy - Second Language Reading: A Case Study" (Haddad); (7) "Factors Which Enable Deaf Readers to Get Meaning from Print" (Ewoldt); (8) "A Miscue Analysis of German Speakers Reading in German and English" (Mott); (9) "Reading in Spanish and English: Evidence from Adult ESL Students" (Clarke); (10) "An Exploratory Study of Bilingual Reading Proficiency" (Douglas); (11) "Developmental Patterns in Native and Non-Native Reading Acquisition" (Devine); and (12) "Coupling as a Text-building, Myth-evoking Strategy in Vietnamese: Implications for Second Language Reading" (Schafer). (JB)

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ED198744

Papers in Applied Linguistics

# LINGUISTICS AND LITERACY SERIES: 1

## Learning to Read in Different Languages

edited by Sarah Hudelson

Roger W. Shuy, General Series Editor

U.S. DEPARTMENT OF HEALTH,
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Library of Congress Cataloging in Publication Data
Main entry under title:

Learning to read in different languages.

(Linguistics and literacy series ; 1)
"July 1980."
Includes bibliographies.
1. Reading--Addresses, essays, lectures.
2. Miscue analysis--Addresses, essays, lectures.
3. Education, Bilingual--Addresses, essays, lectures. 4. Reading, Psychology of--Addresses, lectures. I. Hudelson, Sarah. II. Series.
LB1050.L385 428.4 80-36878
ISBN: 0-87281-118-2

January 1981
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By the Center for Applied Linguistics
3520 Prospect Street, N.W.
Washington, D.C. 20007

Printed in the U.S.A.

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# Introduction

In recent years, a great deal of reading research has investigated the cognitive, linguistic, and experiential bases of reading performance. Attention has focused increasingly on what the reader brings to the printed page and how this prior knowledge (life experiences, language background, cultural heritage, and so on) affects the reader's interpretation of print.

The miscue analysis research of Kenneth Goodman and his students and colleagues stands out particularly in this area. Numerous analyses of native English speaking readers' oral reading and retelling have shown that even young readers are not bound to letter-by-letter processing of print. Rather readers use both selected visual cues and their knowledge of language and the real world to anticipate, to predict, and to hypothesize about print. Frequently these activities result in oral reading that differs from the printed page. However, often the readers' miscues (observed responses that are different from expected responses) retain rather than alter meaning.

Because several of the papers do deal with miscue analysis, it seems sensible to acquaint readers who may be unfamiliar with miscue notations with standard miscue marking--the symbols that miscue researchers use to specify the ways in which observed responses (OR) differ from print or expected responses (ER). The following marking system is used (Y. Goodman and Burke, 1972):

(1) If a reader substitutes part or all of one word for another, the *substitution* is written above the appropriate part of the text.

th
I see where you are

r
She saw the cat

(2) If a word, several words, or part of a word is left out, the *omission* is circled.

Look at the big dog
She walks to school every day

(3) If a word (or words) is added to the text, a carat is used to indicate the *insertion* and the insertion is written above the line.

steep
The boys ran up the ^ hill and down

(4) If parts of letters, words, phrases, or clauses are interchanged, a transposing symbol is used to indicate the *reversal*.

"Look at that fire," the reporter said

She saw the movie with me

(5) A line is drawn from right to left under words that are repeated by the reader (*repetition*).

He went home after work

(6) If a miscue is corrected by the reader, this *correction* is indicated by a ⓒ.

ⓒ th
I see where you are

(7) If a reader first reads a word or words correctly and then miscues, AC indicates *abandoning a correct form*.

(8) If a reader tries but fails to correct a miscue, the symbol for *unsuccessful attempt to correct is used*.

(uc)①tied② train
She tried to hide her grief

(9) When a reader tries to but does not pronounce a complete word, a dash following the substitution indicates a *partial word*.

sunk-
He didn't take his father's suggestions

(10) When a reader produces a miscue which is not a known word in English, the miscue is called a *non-word substitution*. This substitution is indicated by a dollar sign.

$platt
She planted a tree for Arbor Day

(11) Miscues that result from *dialect differences* are identified by a ⓓ preceding the dialect miscue.

ⓓ sh
Sit in that chair please

ⓓan
He saw me and my brother

While some of the papers in this volume use slightly variant notation systems, most are concerned with the major categories of miscues noted here.

Until quite recently most of the research done used native English speakers as subjects. The papers that comprise this volume were collected in response to two concerns stemming from research with native English speaking readers: (1) Would studies of native speakers of languages other than English reading in their native languages reveal universalities in the reading process across languages? (2) Would studies of readers reading English as a second language suggest that generalizations about the processing of print could extend to second language reading? All the contributions in this volume address one or both issues.

Because of Kenneth Goodman's considerable contribution to this area of reading research, he was asked to contribute some introductory remarks. All but one of the other papers represent research efforts with native speakers of languages other than English or with speakers of English as a second language. Some are specifically miscue analysis studies, while others deal with such topics as performance on cloze tests and word list reading compared to performance on contextual selections. However, all reflect the view of reading as a language process, and all provide data to support this view.

Six of the studies report data from children's reading. Barrera's and Hudelson's studies were done with native Spanish speaking Mexican American children reading in Spanish as a first language. Hudelson compared beginning readers' reading of word lists to their reading of the same words in selections. She also described their ability to perform on cloze tasks. Barrera analyzed the miscues generated by Spanish speaking children who could be described as fluent readers in Spanish (children with at least three years experience in Spanish reading). Hodes investigated the reading behavior of several Yiddish-English bilingual school beginners, dealing both with the children's reading of Yiddish (their first language) and English (their second language). Romatowski also considered reading in both a first and second language, reporting on the miscues made by native Polish speaking fifth grade immigrant children reading stories in Polish and in English. Haddad also studied first and second language reading performance but with a different focus. She examined the English as a second language reading strategies of two young native Arabic speakers who never learned to read Arabic and compared them with the second language reading strategies of a native Arabic speaker already literate in Arabic. The last study of young readers is an especially intriguing one. Ewoldt chose to examine and to describe the reading of profoundly deaf children (native speakers of sign language) reading standard English print, a fascinating twist on reading in a second language.

Three papers summarize data from studies of young adult and adult readers. Mott reports on the oral reading of college-age speakers of German studying in the U.S. These subjects read both in German and in English (which they had studied as a second language before coming to the U.S.). Clarke, using both miscue analysis and the cloze procedure, compares the reading behaviors of first language "good" and "poor" readers to their second language reading. He is especially interested in the transfer of skills from first to second language reading. In this case, his adults were readers of Spanish as a first language and English as a second language. Douglas utilizes a variation of the cloze procedure--clozentropy--to attempt to measure bilingual reading proficiency. Cloze tests were administered in Japanese and English to university students who were either native speakers of Japanese or of English. Douglas discusses relationships between performance on cloze tests in first language and second language reading.

Devine studied the English as a second language reading of a group of young adult Mexicans at several levels (low to high) of second language proficiency. She compared the miscue patterns of readers at the different proficiency levels to the miscue patterns Yetta Goodman has described in young native English speakers developing reading proficiency in their native language. She found many correspondences between the two groups of readers.

The last paper differs from the others in that it presents textual analysis (rather than reading performance) data and offers implications from that for second language reading. Using Vietnamese stories, Schafer describes and provides illustrations of several rhetorical devices present in Vietnamese culture and literature. He then contrasts these devices to ones that might be found in English stories, making the important point that understanding of story content (reading comprehension) may be affected by the readers' predispositions (from the native language) to interpret text in particular ways. Readers of a second language bring to the task sets of expectancies about text based on their first language experiences with particular literary forms. These literary experiences may affect their second language reading. Schafer, then, addresses directly the issue of text interacting with reader as well as reader interacting with text.

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# Miscue Analysis and Future Research Directions

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Miscue research is over 15 years old now. It started as an attempt to study reading in as natural a condition as possible, with kids reading whole, moderately difficult stories they hadn't seen before. It began with the question, "Can reading be described using the tools and concepts of linguists?" Later that was broadened to psycholinguistics and sociolinguistics. Miscue research was based on a developing theory and model and in turn furnished the reality base for testing, confirming, and modifying the model. From the beginning miscue research was hypothesis generating, not hypothesis testing. It was descriptive but powerfully so because of its theoretical base. Because it was rooted in the reality of reading, it spawned diagnostic techniques easily applicable to and useful in classrooms and clinics.

Miscue research uncovered a means of studying not only oral reading, but all cognitive and linguistic processes because it uniquely provided an overt performance to compare continually to an expectation (Goodman and Goodman, 1977).

It seems appropriate here to summarize some of the key contributions that miscue analysis has made to knowledge and research in the field of reading. That can be a prelude to a consideration of the questions which have emerged in reading which seem most in need of answers. We can look at miscue research as one means of getting at some of these questions.

## CONTRIBUTIONS OF MISCUE ANALYSIS TO UNDERSTANDING READING

Perhaps the most basic contribution of miscue analysis to knowledge of reading is its demonstration that reading is an active, receptive language process. By examining the miscues of readers of wide ranges of backgrounds and proficiencies, we've forced attention to the fact that the study of reading cannot be confined to a focus on print, letter-sound relationships, and words. Miscue research brought focus on the role of syntax and grammar in reading. It demonstrated the relationships of language and meaning and the fundamental involvement of meaning as both input and output in reading.

Closely related to this is the concept that a reader, at all stages, is a user of language. Miscue analysis vividly demonstrates the readers' integrated use of graphophonic, syntactic, and semantic cues to construct meaning.

The model of reading as a "psycholinguistic guessing game" (Goodman, 1969) drew several key concepts from miscue analysis:

- Accuracy in reading is neither a necessary nor normal characteristic of reading.
- Oral miscues reflect the psycholinguistic process of constructing meaning through predicting, sampling, confirming, and correcting.
- A corollary of that is that nothing readers do as they read is random. Reading, like all language, is patterned and rule-governed.

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*Presented at the 7th World Reading Congress of the International Reading Association, held in August, 1978 in Hamburg, West Germany.

•Self-correction provides powerful insights into the reader's concern for meaning and effectiveness in achieving meaning.

•Reader intonation in miscues shows the syntactic processing of the reader.

•The syntactic predictions and assignments of deep structure are revealed by the intonations the reader chooses.

•Graphophonic information is used by readers in a limited context of syntactic and semantic prediction.

•Efficient reading uses the least amount of information from the three cue systems to construct meaning.

Miscue research has made it possible to see strength and order even in beginners and readers of limited effectiveness. Because it operates in whole natural text, it shows readers as meaning seekers, intuitive grammarians, problem solvers, and users of psycholinguistic strategies. This has made possible a positive alternative to the pathological, deficit views on which most American reading instruction is based. For research, it has meant a break away from research narrowly designed to show deficiencies and has made it possible to re-evaluate old studies to reveal their essential fallacies. The effects of dialect and language difference, perception, and other factors are seen very differently in the context of a positive view of the reader operating in a whole language context.

While Americans have tended to take a pathological view of reading, in much of the world reading is viewed simplistically as a quickly learned response to print. Miscue analysis has served to demonstrate that the process of reading in all languages is complex. That insight can be the basis for new approaches to reading instruction across languages, cultures, and national frontiers.

While researchers, theoreticians, and teachers have not universally accepted all of the concepts cited above, they have been forced to deal with them. Research to refute or offer alternative explanations for miscue findings has become common. Others have explicated their own theories of reading to counter theories based on miscue research.

Teachers, using various forms of miscue analysis, have been able to reexamine their practice and belief in the context of the reading process at work. They can put a theoretical base under some aspects, discard others, and sharpen still others to fit reality. They see why things work and why they don't.

Miscue analysis, in various forms, has become a tool for classroom teachers and clinicians. Because of its reality base--it only requires a real reader at any stage of proficiency reading a real text--it can be directly applied by practitioners to specific monitoring of individual pupils. The most widely used application is the *Reading Miscue Inventory (RMI)* by Yetta Goodman and Carolyn Burke. This adaptation of our research procedure shifts the focus in observation from the quantitative analysis of the informal reading inventory to a qualitative analysis. Its widest use has been in teacher education, both undergraduate and graduate. It is instrumental in helping teachers to reconceptualize the reading process through intensive study of what readers are really doing. That helps them move away from pre-occupation with accurate word identification and shift to concern for comprehension.

Teachers come to appreciate the significance of self-correction; they see children as competent language users, and they learn to value the strengths that children's miscues reveal.

Miscue analysis both provides knowledge to and requires knowledge from the people who use it. Syntactic and semantic aspects of language must be considered in analyzing miscues. It's a time-consuming procedure, particularly for the novice, but as insights into language grow, it gets quicker and informal uses become possible. Ultimately, it is the insights of the informed teacher and not miscue analysis itself which make the difference.

## A SINGLE READING PROCESS

Our research over the past decade and a half with American children of various ages, reading proficiencies, and linguistic backgrounds has convinced us that there is a single reading process. That process gets the reader from a printed text composed by a writer distant in time and space to a coherent message constructed by the reader. Enough miscue research has now been done on reading in other languages--Yiddish (Hodes, 1976), Spanish (Barrera, 1978; Lopez, 1975), Polish (Romatowski, 1972), American Sign (Ewoldt, 1977), German (Mott, 1977), and others--to convince us that this unitary process is the same across languages. Miscues reflect this process whether the language is written in a Roman or Hebrew alphabet or logographically left-to-right, right-to-left, or top-to-bottom. The miscues reflect the particulars of the syntax and orthography of the language in ways that are predictable from a psycholinguistic model of this unitary reading process.

Miscue analysis is, then, usable in all languages and writing systems. More miscue research in more languages with more varied populations under more circumstances is needed to verify this conclusion and explicate how the reading process is influenced by linguistic particulars and how its universals show through.

Miscue research has, with other developments in linguistics, psycholinguistics, and sociolinguistics, provided considerable knowledge about reading. But it has also created new criteria for judging the importance of questions we still need answers to.

## ISSUES IN READING NEEDING STUDY

Three kinds of knowledge are needed that relate to reading: (a) knowledge about the reading process; (b) knowledge about how reading is learned; (c) knowledge about how reading can be most effectively taught.

### *Process*

Miscue analysis is most useful in studies of the reading process. We need studies that look at the aspects of the process characteristics in greater detail. A few promising areas for depth analysis could be:

- Graphophonic: Specific frequencies of relationships between graphemes in expected and observed responses; specific frequencies of relationships between phonemes in expected and observed responses; spelling pattern involvement in miscues; patterns of non-word substitutions.
- Syntactic: Miscues on specific grammatical inflections; syntactic miscues of bilingual speakers on highly inflected and relatively uninflected language; miscues involving specific relationships between intonation and punctuation; function word miscues; specific transformations and transformational rules as they influence miscues; specific surface syntactic patterns and their involvement in miscues; anaphoric and cataphoric reference in miscues; ambiguous surface structures; prediction of deep structures at surface nodes.
- Semantic: Synonymity in miscues; paraphrasing; miscues involving word-coining; effects of collocation; semantic cohesion elements in miscuing; schema setting and prediction of miscues.
- Discourse analysis: Most miscue research has analyzed the reading process in individual readers and small groups of readers. We need now to examine text structure and see how miscue patterns relate to it.

A whole range of syntactic and semantic analyses of text have emerged in recent years. These open up whole new vistas of analyzing reading as response to text. Miscue frequency may be predicted through propositional analysis or delineation of macro- and micro-structure, and then miscues may be studied in relationship to these predictions.

Analysis of the relationships of retellings, quality of miscues, and text structure or story grammar is another promising area.

Halliday (1973) has provided a conceptual framework for language that can place it in a social-cultural context. Cross-lingual and cross-cultural studies which deal with miscues made on common materials with story grammars or macro-structures of varying cultural relevance could prove fruitful.

Analysis of texts with different basic functions and purposes can form the basis for interesting miscue studies of the reading process. For example, narrative texts can be compared with expository texts.

### *Learning*

Not enough research has been done in any country on learning to read as differentiated from reading instruction. This is particularly difficult to study with the exception of learning which takes place naturally outside of and apart from the classroom. A psycholinguistic model can be the base for productive research on natural acquisition of reading, but miscue research can't come into play until some minimal level of ability to deal with connected written texts is achieved.

Some research is in progress that looks at the differences in learning in response to different instructional experiences. This research can employ miscue analysis because it's possible to look at miscues against a psycholinguistic view of productive, proficient reading and see the things readers are doing which reflect explicit instruction and the things they are doing which don't.

Currently, the major concern in the U.S. is that many students in the middle grades (4-6) do not have good enough comprehension of what they read. Miscue analysis can show the focus on comprehending pupils maintain while they read. It can help separate issues of reading competence from issues of quality and appropriateness of materials and from issues of response to instruction. Miscue analysis can also be a better indication of effective learning than group standardized or criterion referenced tests.

Understanding of how literacy is learned must be related to our developing understanding of how language in general is learned. Conversely, what we learn about acquisition of literacy can help to explain general language learning.

The relationship of form and function is a key issue in understanding how and why literacy is learned. Motivation for literacy learning is closely related. Miscue analysis can help to show what readers are doing when they read. It can also show how readers respond to instruction keyed to teaching the form of written language outside of functional use, but other research needs to relate what learners do to the cultural reasons for their doing it.

Teachers can profit from research on literacy learning because they can then have criteria and techniques for separating in their own minds what children learn from what they are taught. The literature on reading is full of naive statements about the relative difficulty of learning to read in different languages. These statements need to be challenged, and the public and the profession reeducated. Nothing in our research suggests any support for the idea that difficulty of reading or learning to read varies among languages.

### *Teaching*

Research on teaching reading has been voluminous but largely uninformative. That's because it has tended to use standard experimental design: Method A or Text A is designated experimental and is used in a series of classrooms matched with others which are the control. They either get Method B or Text B, an alternate instructional program, or Method T or Text T, the traditional, preexisting program. Success is judged by difference in achievement on pretest and post-test.

These studies fail for several key reasons: (1) bad tests, (2) lack of control for interfering variables like teacher difference, (3) vague specifications of features of competing programs, (4) uncontrolled for reading experiences outside the experimental program, and (5) misleading statistical analysis.

Right now schools in the U.S. are in the throes of a "know nothing" movement called "back to basics." The only tenet of this movement for reading is that modern instructional practice has wandered from the simple basic reading instruction of the past and that's why people can't read as well as they used to. Advocates aren't interested in facts, new theories, or knowledge from research. Like the fundamentalists in religion, they want that "old time religion" with no frills or fancy egghead ideas. This creates an atmosphere that's not conducive to research and innovation in reading instruction.

We need research on teaching reading which has the following characteristics: (1) a sound theoretical base on which to explicate methodology or contrast methodologies; (2) a research design that focuses on what is really happening to learners through instruction; (3) a body of assumptions, already examined, about instructional traditions.

Miscue research has made it possible to redirect reading instruction to take advantage of the language and language learning strengths of children. It's now possible to reconceptualize reading instruction as helping natural learning to take place, to reconceptualize evaluation as monitoring development, to reconceptualize reading as constructing meaning, not learning skills or words, and to reconceptualize learning to read as building efficient, effective strategies for comprehending written language. That makes it possible to articulate and develop a theory of reading instruction and a pedagogy based on it. Study of reading miscues, with other psycolinguistic, sociolinguistic, and ethnographic research, must put flesh on the theoretical bones of this pedagogy.

# Reading in Spanish: Insights from Children's Miscues

Rosalinda Barrera
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## INTRODUCTION

In the past decade or so, numerous miscue studies have provided detailed descriptions of children's oral reading behavior (Allen, 1969; Burke, 1970; Carlson, 1971; Clay, 1968; K. Goodman and Burke, 1973; Y. Goodman, 1967, 1971; Martellock, 1971; Menosky, 1971; Page, 1971; Weber, 1970). Overall, these analyses have shown that: (1) young readers do not rely solely on visual cues to process print, but also utilize their knowledge about the syntactic and semantic components of language in extracting meaning from written material, and (2) in reading, young readers engage in anticipating and predicting upcoming text on the basis of selected cues. These characteristics of oral reading by young learners--documented extensively by studies of native English speaking children reading in English--parallel behavior postulated for skilled readers in psycholinguistic models of the reading process (K. Goodman, 1970a, 1971; Hochberg, 1970; Kolers, 1969; Smith, 1971).

## THE STUDY

The research reported here was undertaken to examine the Spanish reading miscues of native Spanish speaking children in an effort to gain additional information about the resources and strategies they utilize to process native language reading material. It was prompted by research by López (1975), which provided evidence that in reading Spanish, young Spanish speakers are not cued by graphophonic information alone, but use contextual cues as well--findings which indicate that Spanish reading is not simply a process of associating letters and sounds (as has been assumed by some professionals). The present study sought to augment those findings by attempting to identify commonalities and/or differences between the oral reading behavior in Spanish of young Spanish speakers and the profile of children's oral reading behavior that has emerged from the aforementioned miscue studies. In doing so, the study checked for further evidence supporting a psycholinguistic perspective for reading in Spanish.

Like many of the miscue analyses cited above, this study investigated the oral reading performance of a small group of readers. Each subject read orally one entire story from a basal reading text in Spanish determined to be at the subject's instructional reading level. Miscues produced during the reading were coded according to procedures adapted from the Goodman Taxonomy of Oral Reading Miscues (K. Goodman and Burke, 1973) and the *Reading Miscue Inventory* (Y. Goodman and Burke, 1972). Nine miscue analysis categories were employed: graphic similarity, phonemic similarity, syntactic acceptability, semantic acceptability, semantic change, correction, intonation, dialect, and grammatical function. Although the data were dealt with quantitatively, the emphasis was on a qualitative assessment of the subjects' Spanish reading behavior.

Fourteen third grade pupils who, according to informal diagnosis, functioned at a fourth grade reading level were selected for inclusion in the study. These children, native Spanish speaking Mexican American pupils from a south Texas border town, were all participants in a bilingual education program. Although they represented three different elementary schools, the children had a common educational background. On entering first grade, they had been identified by their respective teachers as being virtually monolingual Spanish speaking or Spanish dominant, and consequently had received initial reading instruction in Spanish. Though some of them had begun reading English informally during the latter half of second grade, the children had not been provided formal classroom instruction in English reading until the beginning of third grade. All were described by their teachers as being "above average" in Spanish reading ability.

For the research task, the subjects each read a 1,100-word story, "!Bienvenidas, mariposas!," taken from the fourth grade basal reader in the Laidlaw Spanish Reading Series (Tejara et al., 1974). After confirming that the story had not been read or heard previously by the subjects, each child was told to read the story in one sitting away from the regular classroom. Following the reading, each child retold as much of the story as could be remembered. Both activities were tape recorded for later transcription. The data were collected in January of the subjects' third grade school year.

Following data collection, the tapes were transcribed, and miscues were verified by at least two replayings of each subject's tape recording. In constrast with some other miscue studies in which only a fixed number of each subject's miscues have been analyzed, the analysis treats all miscues produced by each subject. The data were processed by computer for statistical breakdown, and scores were obtained both for each individual subject and for the group of subjects. This report focuses on group findings.

### *Major Findings*

From the subjects' reading of the Spanish story, 960 miscues were coded for analysis. The total miscues produced by each subject ranged from 38 to 94, with MPHW (Miscues Per Hundred Words) by subject ranging from 3.5 to 8.5. The group's mean MPHW was 6.2. Of the total miscue count, 79.6% were word-for-word substitutions, 3.5% were word omissions, 2.7% were word insertions, and the remainder were multi-word complex miscues and phrase and clause level intonation miscues. The following sections summarize the data according to the miscue analysis categories by which they were examined.

### Graphophonic Cues

Examination of word-for-word substitution miscues showed that all the Spanish speaking subjects displayed more than an adequate command of graphophonic relationships in reading. Only a small percentage of miscues that were completely dissimilar graphically and phonemically from the expected text words were generated. High graphic and phonemic similarity between Expected Responses (ERs) and Observed Responses (ORs) were recorded for more than half the miscues analyzed.

TABLE 1

Percentage of Graphic/Phonemic Similarity for Spanish Story

| | Subcategory | Graphic | Phonemic |
|---|---|---|---|
| 0 | No similarity | 2.1 | 3.1 |
| 1-3 | Little similarity | 10.7 | 8.1 |
| 4-6 | Moderate similarity | 27.2 | 29.6 |
| 7-9 | High similarity | 59.9 | 59.1 |

Table 1 details the graphic and phonemic similarity analysis for the Spanish reading task. The 10-point hierarchical scale used in the Goodman Taxonomy to identify the degree of graphic and phonemic similarity was collapsed into four broad levels: (a) no similarity, equal to a 0 rating; (b) little similarity, corresponding to points 1-3; (c) moderate similarity, encompassing points 4-6; and (d) high similarity, covering points 7-9.

The following examples of items collected in the study illustrate the assignment of graphic and phonemic ratings by the researcher:

| ER | OR | Graphic | Phonemic |
|---|---|---|---|
| que | y | none | none |
| través | verlas | little | little |
| padre | papá | moderate | moderate |
| regreso | regresó | high | high |
| camión | camino | high | moderate |

That the subjects in the study were able to maintain substantial graphophonic similarity in their substitution miscues is not a significant finding by itself; what miscue research has shown to be essential about the graphophonic cue system is that the reader gain the ability to judge when it is necessary to make use of these cues and when the use of semantic and syntactic cues needs to be considered more important (Y. Goodman, 1971). Qualitative analysis of the Spanish speaking subjects' multiple attempts at unknown words showed a few of the subjects belaboring the "sounding out" of words when utilization of surrounding contextual cues (both syntactic and semantic) might have cued accurate word recognition more rapidly. The majority of the subjects, however, moved ahead, possibly searching for other cues, if the word was not recognized after one or two attempts.

## Syntactic and Semantic Cues

Qualitative analysis of the Spanish speaking subjects' miscues provided various types of evidence that in Spanish reading--as in English reading--readers utilize their language knowledge and meaning system, in addition to their graphophonic skills, to process print and acquire meaning. Miscues were produced which maintained complete syntactic and semantic harmony with the rest of the text and which demonstrated that the young subjects were not depending wholly on visual cues. The following miscues, coded as fully acceptable syntactically and semantically, show the subjects altering the text to substitute language items more familiar to them, to omit redundant words, and to insert words that produced more natural language patterns.

| Expected Response | Observed Response |
|---|---|
| padre 'father' | papá 'papa' |
| madre 'mother' | mamá 'mama' |
| portezuela 'bus door' | puerta 'door' |
| Frank | Franco |
| castigasen 'they might punish' | castigaran 'they might punish' |
| abuelos 'grandparents' | abuelitos 'grandparents' |
| No era dinero. 'It wasn't money.' | Y no era dinero. 'And it wasn't money.' |
| Eran casi las cuatro. 'It was almost four.' | Ya eran casi las cuatro. 'It was almost four already.' |
| Algún día el lo descubriría. 'Some day he would find out about it.' | Algún día lo descubriría. 'Some day [he] would find out about it.' |

| | |
|---|---|
| dos o tres mariposas Monarca volaban 'two or three Monarch butterflies were flying' | dos o tres mariposas volaban 'two or three butterflies were flying' |
| Eran las mariposas Monarca que regresaban al sitio donde pasarían su vacación de invierno. 'It was the Monarch butterflies which were returning to the site where they would spend their winter vacation.' | Eran las mariposas Monarca. Regresaban al sitio donde pasarían sus vacaciones de invierno. 'It was the Monarch butterflies. They were returning to the site where they would spend their winter holidays.' |
| Tal como dijo el Dr. Algard. 'Just like Dr. Algard said.' | Tal como les dijo el Dr. Algard. 'Just like Dr. Algard said to them.' |

As observed in miscue studies with English speaking children, the young Spanish speaking readers in this study also produced miscues at points in the text where alternate structures were possible. It is evident from these miscues that the subjects were indeed using their language and the meaning being gained as they read to anticipate and predict, or "guess" at, upcoming syntax and semantics. Although these miscues or "guesses" did not always prove compatible with the author's structure and meaning, they offer proof that the subjects were not simply processing the text word by word, but were instead dealing with larger syntactic units or language wholes. Furthermore, shifting to other possible patterns within the language as they read reflected the subjects' facility in their native language and the use of this language knowledge in reading.

The examples given below illustrate the subjects' predicting behavior in reading. The English translations have been marked to show as closely as possible how the subjects were predicting alternate structures as they read in Spanish.

© la
Mientras comía y fregaba los platos, . . .

© the
'While he ate and washed the plates, . . .'

© y
Protegieron las plantas que pudieran helarse . . .

© and
'They protected the plants that could freeze . . .'

© a
. . . y Frank entró de un salto. Se metió la mano al bolsillo . . .

© [went] into
'. . . and Frank entered at a bound. He put his hand into his pocket . . .'

Another subject processed the above example in the following manner:

© sacar
Se metió la mano al bolsillo para pagar, cuando . . .

© take out
'He put his hand in his pocket to pay, when . . .'

Further evidence that the young Spanish speakers formulated hypotheses about language and meaning as they read was provided by numerous multi-word miscues affecting Spanish grammar. These miscues usually involved number changes in nominal phrases or across subject-verb relationships. As López (1975) noted in her study, these miscues frequently were followed by successive miscues that agreed grammatically with the initial miscue, e.g., *los árboles* 'the trees' became *el árbol* 'the tree,' *las mariposas estaban* 'the butterflies were' was changed to *la mariposa estaba* 'the butterfly was.' Sometimes these multi-word miscues stretched across sentence boundaries before awareness and overt correction occurred. It is apparent that despite the visual cues available in the highly inflected Spanish system in reading, the readers altered the text to match their original hypotheses about the syntactic/semantic structures.

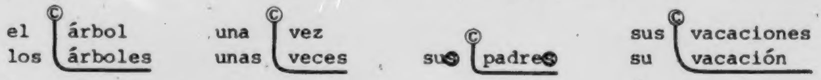
From a quantitative point of view, miscues resulting in syntactic structures acceptable within the sentence and passage were produced by the Spanish speaking readers at a more frequent rate than semantically acceptable ones (51.1% and 34% respectively). Table 2 presents the syntactic and semantic acceptability ratings for the group of subjects.

TABLE 2

Percentage of Syntactic/Semantic Acceptability for Spanish Story

| | Subcategory | Syntactic | Semantic |
|---|---|---|---|
| 0 | Unacceptable | 19.1 | 35.7 |
| 1-2 | Partially acceptable | 29.8 | 30.4 |
| 3-4 | Acceptable in sentence or passage | 51.1 | 34.0 |

It should be noted, however, that the proportion of semantically acceptable miscues was not any higher because a number of miscues were judged as partially acceptable syntactically and, thus, partially acceptable semantically according to restrictions by the Goodman Taxonomy. For example, in some multi-word miscues involving a number change within a noun phrase, the altered noun was subsequently corrected, but the preceding word was not, rendering two miscues, both of which were only partially acceptable syntactically and semantically. To be specific, *las montañas* 'the mountains' was read as *la montaña* 'the mountain'; then *montaña* was corrected to its original plural form, but the newly singularized definite article *la* remained uncorrected. This, too, was the case with phrases such as the following:



In each of the above instances (and others), the young readers did not concern themselves with overtly correcting all the altered words; it was as if, by correctly supplying the original noun, the preceding word would also be corrected. It is highly unlikely that much meaning was lost in cases such as these as the readers immediately demonstrated awareness of their miscues and attempted to correct them.

## Grammatical Categories

Comparison of the grammatical categories of ERs and ORs within the sentence in which they occurred revealed a high degree of syntactic competence in reading on the part of the Spanish speaking subjects. Evidence of strong influence by the syntactic system during the reading process has been a repeated finding in miscue analyses of English reading behavior as well as in miscue studies of reading in languages other than English (Hodes, 1976; Romatowski, 1972). Miscued text items, in particular verbs and nouns, usually were replaced by words of identical grammatical category. Function words as well as noun modifiers more often than not were replaced by words of like grammatical category. To retain the grammatical category of miscued items, it seems likely that the young Spanish readers were combining their intuitive knowledge of language structure with syntactic cues from the text that had already been processed.

Table 3 shows the percent of matching substitutions of grammatical categories, i.e. instances in which a noun was substituted for a noun, a verb for a verb, and so on. The total number of text words (ERs) involved in each category was as follows: verbs, 247; function words, 217; nouns, 204; noun modifiers, 43; verb modifiers, 26; contractions, 16; and indeterminates, 6.

TABLE 3

Percentage of Miscues Having Same Grammatical Identity as Expected Response

| Grammatical Category | Identical Miscue |
|---|---|
| Noun/noun | 79.9 |
| Verb/verb | 90.3 |
| Noun modifier/noun modifier | 69.8 |
| Verb modifier/verb modifier | 38.5 |
| Function word/function word | 71.9 |
| Indeterminate/indeterminate | 50.0 |
| Contraction/contraction | 6.3 |

Basically, the grammatical categories by which the ER and the OR in Spanish were identified were those employed in English reading miscue analyses using the Goodman Taxonomy. The contraction category was used in the Spanish analysis for the only two contracted forms in Spanish: al 'to the' and del 'of the.' An additional category to those identified above was considered for enclitic formations--a combination of stems from two word classes written as a single word, such as the explícame 'explain [it] to me,' which Spanish has but which English (practically) does not (Stockwell et al., 1965)--as they could not be assigned to any one single existing category. However, rather than creating a new, distinct category to handle these forms, they were classified as being in the indeterminate category since the children's miscues involved only four ERs which were enclitic forms.

## Correction

Almost 75% of the subjects' miscues went uncorrected during reading. Corrections occurred in one of every five miscues and were carried out in a selective manner; i.e. when altered portions of the text did not disrupt syntactic or semantic sense, they were not as likely to be corrected as those that did. Native English speakers reading in English have demonstrated similar correction behavior. Unsuccessful attempts at correction occurred only a small percentage of the time (5.9% of the total miscues), and the subjects rarely abandoned correct responses in favor of incorrect ones.

## Intonation Involvement

For the group of subjects in the study, intonation miscues occurred with somewhat greater frequency than has been documented for groups of readers in English miscue studies, averaging almost 15% of the group's total miscues. Several factors within the test story itself appeared to have contributed to this relatively higher incidence of intonation-related changes. Frequent use of dialogue in the story sometimes caused the subjects to predict and extend direct speech beyond the text portions in quotation marks, to confuse speakers, or to create new lines of dialogue. Sometimes, this resulted in stress being misplaced in overtly accented verb forms, producing shifts from third-person preterite to first-person present, e.g., regresó 'he returned' to regreso 'I return.' Although these changes were inconsistent with the printed words, they provide further evidence that the Spanish speaking subjects were formulating guesses about forthcoming text. The following are examples of intonation miscues produced by several subjects.

> --Está moviéndose mar afuera. Lo ha dicho la Oficina del Tiempo,--le
> {aseguro.
> {aseguró el doctor.
>
> '"It is moving out to sea. The Weather Bureau has said so,"
> I assure you.
> the doctor assured him.'
>
> {--Doblo --
> {Dobló por la Avenida del Faro.
> Frank dijo sorprendido: --No sabía que tuvieras un cliente por acá.
>
> "I turn "
> 'He turned at Faro Avenue.
> Frank said, surprised, "I didn't know that you had a customer around here."'
>
> Abrió la portezuela, y se tiró del autobús sin atender lo que el conductor
> {--Regreso --
> decía. {Regresó por donde había venido.
>
> 'He opened the bus door, and jumped from the bus without paying atten-
> "I return "
> tion to what the driver was saying. He returned the way he had come.'

The preceding example also was typical of several intonation miscues which appeared to be directly influenced by forms of the verb decir 'to say,' 'tell,' which frequently act as signals to dialogue and apparently had strong conditioning effect on the Spanish speaking subjects in the study (as the verb form said has been observed to have in the oral reading of young English speaking readers).

### Dialect Involvement

During the Spanish reading task, dialect involvement in the grammatical and lexical areas was minor (equal to 1.6% of all miscues), but phonological dialect was present in all the subjects' readings. More extensive dialect involvement in the grammatical and lexical areas was recorded in the subjects' retellings of the story read, supporting K. Goodman and Burke's (1973) observation that evidence of dialect in oral reading is less likely than in subjects' oral retellings. Appearing in the post-reading comprehension check were regionally-preferred items, such as carro 'car,' bos 'bus,' and troca 'truck' for autobus 'bus' and camión 'truck' in the story; chamaquito 'little boy,' in reference to the main character in the story; and *juía* for *iba* 'was going' and *pa'trás* 'back,' used on numerous occasions by many of the subjects. These items, however, did not appear in the oral reading.

Interestingly enough, differences between the children's dialect and that of the story (or, more correctly, that of the writer(s) of the story) were very evident in the reading of two verb forms which appeared in an imperfect subjunctive model rarely used in popular Spanish in Texas or the southwestern U.S., i.e. *castigasen* 'they might punish' and *llegasen* 'they might arrive.' Almost all the children miscued on each verb form, although they usually retained the base word or stems, producing substitutions such as *castigarse* 'to punish,' *llegarse* 'to arrive,' *llegarsen* (non-word), and *llegará* 'I will arrive.' Three children produced the equivalent term *castigaran* for *castigasen*.

## CONCLUSION

Native Spanish speaking Mexican American children, reading at their instructional level in Spanish, deviate from the printed text (miscue). These miscues--substitutions, omissions, insertions, and reversals of words or parts of words--reveal that reading in Spanish does not involve solely the processing of graphophonic cues, but also involves simultaneous application by readers of their language background and their knowledge of the material being read. The miscues in Spanish also indicate that young Spanish speaking readers do not merely process word by word, or letter by letter, but anticipate and predict their way through written text, sampling larger language/meaning units than the individual word. This conclusion supports and extends similar conclusions drawn by López (1975) in her study of native Spanish speaking Mexican American children and their use of the context while reading in Spanish.

Although the Spanish readers' miscues generally demonstrate conformity to the graphophonic restrictions of the text, it is significant that these miscues also exhibit concomitant influence from the readers' syntactic and semantic systems. This influence is reflected in several ways. Word substitutions by readers usually have the same grammatical identity as the text words replaced. Some miscues occur at junctures in the text where alternate structures are possible and conform syntactically to preceding text, indicating prediction of upcoming text by the reader. Inflectional change in one miscue sometimes triggers congruent inflectional changes in succeeding words. Some omissions affect redundant items in the text which do not contribute greatly to meaning, and sometimes insertions do not change the meaning of the text but instead make it conform more to natural oral language patterns. Words are replaced by lexical items more familiar to the reader's language background.

Furthermore, as young native Spanish speaking Mexican American children read in Spanish, they also correct some of their miscues. Their corrections more often than not serve to rectify miscues which are syntactically and semantically disruptive to the text. In correcting, the children sometimes regress over several text items already pronounced, displaying continued interaction with the text being read and demonstrating use of ongoing confirmation strategies.

Qualitatively, the reading behavior of native Spanish speaking Mexican American children reading in Spanish does not differ greatly from the reading behavior documented in previous miscue studies of native English speaking children of comparable ages and grade levels reading in English. It is apparent that Spanish speaking children also utilize all three cueing systems --graphophonic, syntactic, and semantic--simultaneously as they read, with some Spanish speaking children showing more skill and efficiency at using the three systems in combination than other readers.

Like their English speaking counterparts reading in English, Spanish speaking children demonstrate the following behavior or "profile" as they read in Spanish: (1) they have enough visual discrimination so that their miscues generally have a high degree of graphic and phonemic similarity; (2) they produce syntactically acceptable structures more frequently than syntactically unacceptable ones; (3) they produce some miscues that are semantically related to the ORs, although this production is influenced to a large degree by their familiarity with the story content; (4) they correct some of their miscues, particularly those that produce unacceptable structures; (5) they frequently substitute words of the same grammatical class as the text items replaced; (6) they make some intonation miscues, the incidence of which is affected by text format and style; and (7) they exhibit some dialect miscues in their reading, although not as frequently as in their oral language.

# An Investigation of the Oral Reading Behaviors of Native Spanish Speakers Reading in Spanish

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## INTRODUCTION

In the past few years, both the development of models of the reading process and research aimed at testing these models have been influenced by scholars who have sought to relate the language and experiential backgrounds of readers to the act of processing information from print (Geyer, 1972; Williams, 1973). Reading is being viewed as a complex cognitive skill, a visual-mental process in which certain selected visual stimuli are extracted from and transferred to the brain, where they are processed into information.

Several models of this process have been developed. Smith (1971, 1975), for example, has posited that when skilled readers read, their eyes pick up, during each fixation, visual clues which are transmitted to the brain, where they are processed. The eye then provides information to the brain. Combining knowledge of language with previous experiences with print, readers construct meaning from the limited visual cues received. Successive fixations allow readers to test hypotheses about the meanings that have been constructed. As reading proceeds, readers check to determine whether their constructions have been accurate. If they need revision, regressions may occur in which additional visual cues are sought, so that new predictions of meaning may be made. If the original prediction is confirmed, readers process new stimuli, and the procedure continues. The brain also tells the eye what to do. Reading for the skilled reader, therefore, is a continuous process of selecting certain cues, predicting meaning from them, and moving on to succeeding cues in order to confirm or deny previous predictions and to make new ones. The ability to predict has its base in readers' accumulated knowledge about their language, both oral and written. For Smith reading is basically a language cognitive process in which readers focus on limited visual cues which are combined with a knowledge of the syntax and semantics of their language and generalizations developed about the orthographic patterns of the written code to reduce uncertainty about the meaning of what is being read.

Another model of the skilled reader as an information processor has been formulated by K. Goodman (1967, 1970c, 1973a, 1973b), who has referred to reading as a "psycholinguistic guessing game" in which skilled readers, as they read, choose selected cues from all those available to them. Particular cues are selected on the basis of readers' expectations of and predictions about what is coming up in their reading. These expectations, in turn, are based on the totality of language experiences (both oral and written) which readers bring to the task. Goodman has maintained that reading involves a constant process of selecting cues, making tentative decisions about meaning (which in turn affect future cue selection), selecting more cues, confirming or rejecting hypotheses on the basis of these new selections, and so on. To reconstruct a message written by the author, readers use a combination of graphophonic, semantic, and syntactic cues as they read. They combine sampling, predicting, confirming or rejecting, and resampling strategies to effect this reconstruction of meaning.

Ruddell (1968, 1970) has suggested that initially readers cue in on the surface structure of what they are reading, i.e. on the graphic symbols. They then decode the written symbols into syllable units or words. These surface units are chunked together into meaningful phrases and sentences by readers, who subsequently employ a variety of cognitive strategies to arrive at the deep structure, at the meaning of the graphic symbols, based on their background of oral language. Ability to derive meaning from written language, therefore, is at least partially dependent upon readers' pre-developed oral language.

Reading, therefore, is a language based act. Skilled readers receive some information from their visual perception, but this information is incomplete. Readers, therefore, must call on their background of knowledge in order to synthesize the partial information they have received. Readers use their oral language background, their knowledge of phonological generalizations and the rules of the writing system, and their experiential background in reading to fill in the missing information, to construct meaning (Mattingly, 1972).

The picture emerging in the literature on reading in English shows, among other things, the individual being involved actively in the reading process, reading other than strictly letter by letter, and using selected cues both to anticipate what is coming and to figure out what may be unclear.

In the last few years Spanish speaking writers have begun to consider this more complex view of the reading process. Historically, Spanish and Latin American scholars have viewed the reading process as a mechanical one, in which auditory and visual skills were used to memorize or internalize the correspondences between the written symbols and the sounds of the language these graphemes stood for (Bonilla Aquino, 1965; Braslavsky, 1962). More recently, however, the trend among writers in the field of Spanish reading has been away from the concept of reading as a purely mechanical process and toward the idea of reading as a cognitive process, even in the early stages of acquisition (Basurto García, 1969; Jiménez Hernández, 1963).

Oñativia (1965), for example, has written that, as language develops, children learn to put elements together, using, as they do so, language for self-expression and for ordering their world. Children who have arrived at the stage of learning to read, therefore, have experienced a great deal, both in terms of language and of life itself. They have learned to use language for thoughts and ideas, not as isolated words and sounds. Therefore, reading is an additional cognitive process involving recreation of the author's experiences as expressed in language. Readers bring their language background and their experiences to the written page to recreate meanings.

Jiménez Hernández (1963) has taken the view that reading involves the combining of complex systems of both physical and psychological mechanisms and reactions. He has expressed the belief that this complex of systems, many of which are still not completely understood (1971), are organized into one overall mental function in which the reader's mind converts the printed word into meaning. Meaning is derived from visual stimuli as the mind, in terms of its storehouse of language and experiences, interacts with the stimuli. (This view also has been expressed by Saez, 1966.)

When viewing both languages, then, there is a definite trend toward seeing reading as a cognitive-language process. Scholars who have defined reading as cognitive functioning have maintained, especially in their references to skilled readers, that reading is more than a letter-by-letter sounding out activity. What, however, does this say about the beginning reader, about the child acquiring skill in reading in the native language?

Many studies of young readers have been done in English. These studies, most of which have examined oral reading behavior, suggest that in English beginning and young readers do employ some of these same sampling and predicting strategies. They do use their language and experiential backgrounds to predict what is coming up in sentences (Clay, 1968, 1969; K. Goodman, 1964; Y. Goodman, 1967; Weber, 1970).

Do young Spanish speaking children reading in Spanish exhibit similar behaviors? The study described in this article was undertaken in an attempt to answer that question. In 1964 K. Goodman conducted a study of primary school age readers, using 100 first, second, and third grade children from a public school near Detroit. Each child read a list of words taken from a basal reading series not used in the child's classroom but judged to be at the child's reading level. The child's reading errors were noted. Later, each child read the story on which the word list was based. Each child's reading was recorded and errors marked again. In comparing the errors made on the word lists to the errors made in the context of a selection, Goodman found that all of the children were able to read many of the words in context that they missed in isolation--at least half, in fact.

In examining the substitutions children made in reading the paragraphs, Goodman found that older children substituted more frequently than did younger children. He noted further that when substitutions were made which did not alter the meaning of what was being read, the substitutions generally were left uncorrected.

This overt behavior led Goodman to theorize that the children were using the context of the story to predict unknown words, and that, when they were reading a story, they were using their language background to fill in what logically fit in the context of a sentence. Goodman's results demonstrated that young readers do process written material in ways that are very similar to those employed by skilled readers. Even the beginning reader is a guesser and a predictor, bringing language knowledge and background to the reading task and using this background to obtain meaning from the printed page.

## THE STUDY

The study described above was chosen as a model for this study, which examined the children's oral reading behavior in Spanish. The readers were second and third grade native Spanish speaking Mexican American children, all of whom were participating in a bilingual program and all of whom had received initial reading instruction in Spanish. Children first read a list of words at their instructional level and, on the following day, a passage containing those same words. Each child also read an instructional level selection (chosen from the Santillana Bilingual and Senda Spanish reading series) in which words were covered up which the subjects had to predict.

The initial question was whether significant numbers of words that were pronounced incorrectly on the word lists later would be pronounced correctly in the selections. As Table 1 indicates, significant numbers of words pronounced incorrectly in isolation later were pronounced correctly in the selections. However, it soon became apparent that many reading miscues (errors) that were *not* made when children read the word lists were made when children read these words in the selections. The percentages of errors made in isolation that were read correctly in the selection were 54.7% (preprimer), 71.4% (primer), 85.2% (first grade), 91% (second grade), and 80.3% (third grade), while the percentages of errors made in the selection that were previously read correctly from the word list were 26.8%, 49.4%, 85.3%, 75.2%, and 76.5% respectively. These contextual miscues, then, were examined and have become the focus of this article.

To offer a generalization about these miscues, it is certainly accurate to state that the readers used graphophonic cues as they read, cues within the words themselves. Yet, significantly, the miscues also demonstrated the readers' use of cues from the flow of the language in the stories being read and from the particular linguistic-cultural experiences of the readers. Examples of the use of these three cue systems follow; they represent miscues made exclusively in the first, second, and third grade selections, not on the word lists.

TABLE 1

Comparisons of Word List Errors to Selection Errors
(N=15 in each group)

| Subjects | Errors | $\bar{X}$ | SD | t |
|---|---|---|---|---|
| Preprimer | total errors on word list | 9.2 | 2.56 | 3.22* |
| Readers | total errors in selection | 5.33 | 3.73 | |
| Primer | total errors on word list | 13.4 | 4.75 | 4.73* |
| Readers | total errors in selection | 5.06 | 4.62 | |
| First Grade | total errors on word list | 8.06 | 4.97 | .039 |
| Readers | total errors in selection | 8.13 | 4.54 | |
| Second Grade | total errors on word list | 7.2 | 1.68 | 2.90* |
| Readers | total errors in selection | 10.13 | 3.46 | |
| Third Grade | total errors on word list | 9.6 | 5.33 | 1.02 |
| Readers | total errors in selection | 7.8 | 4.01 | |
| All Readers | total errors on word list | 9.49 | 1.08 | 1.56 |
| | total errors in selection | 7.8 | 1.88 | |
| Preprimer | errors on word list | 9.2 | 2.56 | 3.82* |
| | errors repeated in the selection | 4.33 | 4.17 | |
| Primer | errors on word list | 13.4 | 4.75 | 7.37* |
| | errors repeated in the selection | 2.86 | 2.52 | |
| First Grade | errors on word list | 8.06 | 4.97 | 5.00* |
| | errors repeated in the selection | 1.2 | 1.43 | |
| Second Grade | errors on word list | 7.2 | 1.68 | 13.3 * |
| | errors repeated in the selection | .8 | .83 | |
| Third Grade | errors on word list | 9.6 | 5.33 | 4.82* |
| | errors repeated in the selection | 1.93 | 2.83 | |
| All Subjects | errors on word list | 9.49 | | 5.52* |
| | errors repeated in the selection | 2.2 | | |

*p<.01 df 28

The 15 children reading at a first grade level read a selection about a clown named *Pedro* (*Pedro, el payaso*). At the within word level, a variety of miscues occurred with frequency. In the story the clown was referred to several times as *Pedrito* rather than *Pedro*, yet nine of the readers read *Pedrito* as *Pedro*. The *niñito* 'a small child' was read as *niño* (removing the diminutive form) by eight of the children. Eight readers at one point in the story read *cabeza* 'head' for *cabezota* 'head' (with an augmentative ending), substituting the basic word for the word with the *ota* ending (denoting a particularly large head). Both words had been used previously in the story. Three readers substituted *chicos* for *chiquitos*. Both adjectives mean small, but the second one has the diminutive added. Five children read *tenía* 'he had' for *tiene* 'he has.' A similar verb tense change occurred as six children read *dice* 'he says' for *dijo* 'he said.' Four subjects pronounced *quiere* 'he wants' as *quería* 'he wanted' (imperfect tense). These examples provide evidence that the children were using graphophonic cues available to them within words, focusing on the first syllables of words. However, the morphological changes that the children have effected demonstrate their use of what they know about the Spanish language as well as what they know about sound-letter correspondences.

At the phrase, clause, and sentence level miscues occurred which further suggest that children are active participants in the reading process and that they bring to the process a background of language knowledge and personal experiences. The first two sentences of the story read: *Pedrito tiene muchos sombreros. Uno rojo, otro negro, otro azul, y otro verde* 'Pedro has many hats. One red, one black, one blue, and one green.' Four children read the second sentence as *Uno rojo, otros negros, otros azules y otros verdes* 'One red, others black, others blue, and others green.' As the readers switched from the singular to the plural, articles and nouns were automatically pronounced so that they agreed with each other. Most possibly, having read the first sentence about the hats, the readers were anticipating plurals in the second sentence. Therefore, they imposed the plural on what they were reading. Two other sentences in the story are the following: *Pedro juega con una pelota en el sombrero. Tiene una pelota en la cabeza* 'Pedro plays with a ball on his hat. He has a ball on his head.' One child read the second sentence as *Tiene una pelota en su mano* 'He has a ball in his hand.' In terms of reality and a child's life experiences, wouldn't a ball be at least as likely to be in someone's hand as on someone's head? Two children read: *Tiene una pelota en su sombrero* 'He has a ball on his hat,' again indicating the reader anticipating a redundancy in the sentence patterns of the story. Given the rather repetitious nature of basal readers, this seems a reasonable anticipation. For the sentence reading *En los pies tiene Pedrito unos zapatos azules* 'Pedro has some blue shoes on his feet,' three readers changed *unos zapatos* to *dos zapatos*, moving from some shoes to two shoes. Given a child's experience with feet and shoes, the readers again demonstrated that they were making sense out of what they had read by making what they read congruent with reality. Two children also did this with the sentence *Tengo unos pies muy chiquitos* 'I have some very small feet,' reading *Tengo los pies muy chiquitos* 'My feet are very small.' The use of *los* rather than *unos* certainly corresponds to what a speaker of Spanish might use. To assume that the reader is not able to pronounce the word *unos* would be a mistake. One reader read *muchos pies* 'many feet' for *unos pies*.

Insertions made by some of the children also should be noted. In the sentence *Salta y sube la pelota, baja la bola después* 'He jumps and raises the ball, afterwards he lowers the ball,' three subjects inserted the word *a*, reading *Salta y sube a la pelota*. Since the verb *subir* often is followed by an *a* construction, this insertion suggests an anticipation based upon knowledge of Spanish. Before the final sentence in the story, one reader inserted the word *y* 'and,' making the sentence read *Y así Pedro se quedó con su sombrero en la cabeza y sus zapatos en los pies* 'And thus Pedro remained with his hat on his head and his shoes on his feet.' It was as though the reader was summarizing the story and concluding it in a form similar to that used in many fairy tales (*Y colorín colorado este cuento se ha terminado* 'And this tale is over').

One miscue made by several children changed the boundaries of two sentences. The context is this: Me gusta el color azul. Pero también me gusta tu sombrero de muchos colores 'I like the color blue. But I also like your multi-colored hat.' Five readers changed this sentence to read: Pedro me gusta tu sombrero de muchos colores 'Pedro, I like your multi-colored hat.' There followed a slight but audible pause after Pedro as though a comma had been inserted to indicate that Pedro was being addressed.

Finally, at this reading level, three miscues made by numbers of readers suggest that the particular language experiences of the community of which the children are a part may affect what they read. The word pies 'feet' appeared several times in the story. Ten children consistently pronounced pies as pieses, a pronunciation which has its roots in the oral Spanish of the children's community. The word bola is used interchangeably with pelota for ball in the story. Three readers, however, consistently read pelota for bola. (In South Texas pelota is a common word for ball, with bola being less common.) Finally, in the sentence Gracias Pedro pero no quiero sus zapatos 'Thank you, Pedro, but I don't want your shoes,' five children substituted the familiar form tus for the more formal sus. This may also be indicative of the children's experiential and language background.

In looking at all of these examples, then, it should be obvious that while readers do attend to graphophonic cues, they are not *necessarily* bound by them. Their knowledge of Spanish and their language and community experiences influence what they pronounce.

This phenomenon continues at the second grade reading level. At this level, the 15 children read a story about youngsters in school reading and writing stories. A variety of language based miscues was evidenced.

At the within word level, for example, se llamaba 'he was called,' 'his name was' was read as se llama 'his name is' by seven children and se llamará 'his name will be' by two children. Five children changed chiquitico to chiquito or chiquitito. Two children read señora 'Mrs.' for señorita 'Miss'; three read dice for dijo; three also substituted había 'there were' for hay 'there are.' One reader made each of the following substitutions: gustaba 'he liked' for gusta 'he likes,' interesantes 'interesting' for inteligentes 'intelligent,' and quedábamos 'we were staying' for quedamos 'we stayed.' In all of these miscues there is evidence of language intruding upon print and of the reader's being influenced by language background.

At this level, too, a consideration of miscues beyond the word level sheds light on the reading process. When processing the sentence Bueno, el cuento trata de la aventura de una gata que se llamaba Pitiminí 'Well, the story is about the adventure of a cat called Pitimini,' three children read las aventuras, changing the article and noun from singular to plural. Four children substituted un gato for una gata, making the cat masculine instead of feminine. One child read el cuento de una aventura de la gata que 'the story is about an adventure of the cat who...,' making the adventure more general but specifying which cat. In the phrase cuentos sobre sus amigos queridos 'stories about his dear friends,' two children used the singular su and then adjusted the phrase to cuentos sobre su amigo querido 'stories about his dear friend.' Two children, using their knowledge of Spanish idioms, read ¿Qué te pasa? 'What's wrong with you?' for ¿Qué te parece? 'What do you think?' The last two sentences of the selection were the following: Señorita yo prefiero oír el cuento de Pitiminí y Cebolla dijo Ana. Yo también lo prefiero dijo Diego 'Miss, I prefer hearing the story about Pitimini and Cebolla, said Ana. I also prefer that, said Diego.' One child read Señorita hoy prefiero oír el cuento de Pitiminí y Cebolla. Hoy también lo prefiero dijo Diego. Changing yo to hoy results in the sentence beginning "Miss, today I want to...". Since prefiero means 'I prefer' and the yo 'I' is redundant (and often not used in conversation except to emphasize the I), perhaps the reader was adjusting the words in a reflection of her knowledge of the redundancy. Since previous sentences declare that the children are hearing a new story, this could also be a reflection of the reader interpreting that the children want to hear a particular story today. Another child did the same thing with the sentence *Pero yo voy a cambiar un poco el cuento dijo Ramón* 'But I am going to change the story a little, said Ramón' by reading *Pero hoy voy a cambiar un poco el cuento dijo Ramón* 'But today I am going to change the story a little, said Ramón.' This also fits in with the context of the story, since Ramón has told a story before and is now going to tell a different story. Two sentences in the selection were: *A Ramón le gusta mucho leer aventuras de animales, pero ¿a quién no le gusta leer aventuras de animales? Desde luego a él no le gustan más los cuentos sobre perros y gatos* 'Ramón likes to read adventures about animals, but who doesn't like to read adventures about animals? But now he no longer likes stories about dogs and cats.' Four children read the verb in the second sentence as *gusta* (*Desde luego a él no le gusta más...*). Since *gusta* had appeared in the previous sentences and since the words *los cuentos* which appear after *gustan* in the second sentence carry the necessity for using the plural *gustan* rather than the singular *gusta*, the error does not seem totally unreasonable.

One child created several new words from the print that was there. Looking at the sentence *En la biblioteca hay un libro que siempre está en manos de Ramón* 'There is a book in the library that is always in Ramón's hands,' the child read *En la biblioteca hay un libro que está usando más Ramón* 'In the library there is a book that Ramón is using more.' Obviously, what was read differs quite a bit from the printed word, but is its meaning totally altered?

A final example from this reading level reflects an adjustment of sentence boundaries. A child considered the following: *Me encanta la idea, así es. Bueno, el cuento trata de la aventura de...* 'I love the idea, that's it. Well, the story is about the adventure of...'. The child read *Me encanta la idea. Así es bueno. El cuento trata de...* 'I love the idea. That's the way it is. The story is about...'. By changing the sentence boundaries the reader has created meaning, even though the meaning may not be exactly what the writer intended.

Likewise at third grade reading level many of the miscues made by the readers indicated that the children were using a combination of graphophonic, extended language, and experiential cues to aid them as they read. The third grade selection focused on a young boy (member of a circus) making new friends. Let's consider some examples of miscues made by the readers of this story.

At the within word level several miscues occurred repeatedly. Three readers changed *exclamó* 'he exclaimed' to *exclama* 'he exclaims.' Two read *tiene* 'he has' for *tenía* 'he had' (imperfect tense), and three others substituted *comienza* 'he starts' for *comenzó* 'he started.' In the sentence *ya te decía yo que pronto encontrarías amigos* 'now I told you that soon you would find friends,' four readers substituted *yo* for *ya*, adding the redundancy of another *I*. *Ya* in this story adds emphasis meaning now. Three other children did the same thing in the sentence *Ya traeré un día a mi amigo Boso* 'Well, I will bring my friend Boso,' reading *yo traeré...* These children increased the redundancy by their substitution, since *traeré* by itself means "I will bring." Two readers substituted the present verb tense *encuentras* 'you find' for the conditional *encontrarías* 'you would find.' Each of the following word level miscues was made by one reader: *se acercó* 'it came near' for *se acerca* 'it comes near,' *lo llaman* 'they call it' for *lo llamaban* 'they called it,' *gusta* 'he likes' for *gustó* 'he liked,' and *mañanita* 'morning' (with a diminutive ending) for *mañana* 'morning' (without the diminutive ending).

Within extended language, miscues also were noted. The first sentence of the selection was: *Al primero que dijo Toño que tenía otros amigos fue a Boso* 'The first one that Toño told that he had other friends was Boso.' Three readers read *otro amigo*, changing plural to singular. One child even extended this singularization into the second sentence of the story, reading *Ya te decía yo que pronto encontrarías amigos* as *pronto encontrarías amigo* (indicating the child would find one friend rather than more than one). Further on in the selection the following sentence occurred: *Cuando fue a casa de Carlos, lo encontró leyendo unos cuentos de Navidad* 'When he went to Carlos' house, he found him reading some Christmas stories.' Five children read *le encontró leyendo* for *lo encontró*. Since *le* is substituted for *lo* as a direct object pronoun when speaking of a person, this miscue is quite natural and reflects understanding as to whom the direct object pronoun refers. Additionally, two children read *le encontró leyendo un cuento de Navidad*, changing "some Christmas stories" to "a Christmas story." When the article was changed from several to singular, the noun agreement followed naturally. In another sentence, the text was: *En nuestro circo todos son muy simpáticos* 'In our circus everyone is very friendly.' One child read *En nuestra ciudad* for *En nuestro circo*. Therefore, the sentence read "In our city everyone is very friendly." Note also the change of *nuestro* from masculine to feminine. Another sentence was *Se había acostumbrado a aquella ciudad y ya le parecía como si hubiera vivido en ella toda la vida* 'He had become accustomed to that city and now it seemed to him as though he had lived in it all his life.' One reader substituted *había* for *hubiera*, changing the clause from the subjunctive tense to the pluperfect tense. Given the use of *había* in the introductory independent clause, it is possible that the child was anticipating another *había* clause.

At the sentence level, too, a fascinating group of miscues occurred. Two sentences were written this way: *Toño solía ir con Maria. Los cuatro niños se pasaban horas y horas jugando a las construcciones y con un robot* 'Toño was accustomed to going with Maria. The four children spent hours and hours playing at construction and with a robot.' One child read *Toño salía ir con Maria y los cuatro niños. Se pasaban horas y horas jugando* 'Toño used to go out to go with Maria and the four children. They spent hours and hours playing.' Thus, the child changed sentence boundaries but still made sense of what was being read. Note also the change from *solía* 'to be accustomed' to *salía* 'to go out.' In a previous sentence, 11 of 15 readers at this level had read *Toño salía ir a jugar a casa de Carlos* 'Toño would go out (or would leave to go) to play at Carlos' house' for *Toño solía ir a jugar a casa de Carlos* 'Toño was accustomed to go to play at Carlos' house.' In fact, three of the 11 readers first read *solía ir a jugar* and then regressed and read *salía ir a jugar*. For an adult speaker of standard Spanish, *salir ir* might be ungrammatical (such a construction does not occur) and overly redundant since both verbs deal with going. Yet the verb *soler* 'to be accustomed to' is not one that is commonly used in South Texas nor is it one used by children. Apparently, the language and experiential backgrounds of the subjects influenced their perceptions of the print, and print was modified so that the sentence would make sense to the readers.

More examples could be given, but it should be obvious from the ones already provided that the young readers of these Spanish selections used print selectively, that they were not bound by the print, that indeed they were seeing the reading process as one involving something beyond merely responding to sound-letter correspondences, and that they were bringing a vast amount of prior knowledge to the process. This prior knowledge was much more than knowledge of Spanish phonics. Certainly the readers had this knowledge, but they also demonstrated knowledge of how Spanish works, of what are the possibilities for words and sentences in Spanish, and of how these possibilities are influenced by the particular speech-experiential community of which the children are a part. These miscues, then, should be seen by listeners as evidence of cognitive functioning rather than of imperfectly developed word attack skills.

After the children read the instructional level selection, they were asked to read an instructional level selection in which every seventh word was covered. The children were instructed to guess or predict what the covered word was, but they were not informed about the accuracy of their guesses. In examining their efforts, the children's predictions were divided into two categories: exact word replacements and acceptable substitutes (defined by the researcher as words of the same form class and/or retaining the meaning of what was read). Percentages of responses falling in the two categories appear in Table 2.

TABLE 2

Performance of Subjects on Clozed Reading Selection

| Subjects | Mean Percentage of Exact Words Predicted | Mean Percentage of Acceptable Substitutes Predicted | Mean Percentage of Total Acceptable Predictions |
|---|---|---|---|
| Preprimer | 52.6 | 20.9 | 73.5 |
| Primer | 44.6 | 23 | 67.6 |
| First Grade | 43 | 23 | 66 |
| Second Grade | 30.3 | 23.7 | 54 |
| Third Grade | 54.6 | 23 | 77.6 |
| All Subjects | 45 | 22.7 | 67.7 |

In looking at these results, the acceptable substitutes offered by the children really struck this researcher's interest, for they provided further evidence for a view of the reader as a language user and as a person whose perceptions of print are influenced by language and life experiences. Many of the substitutions made indicated that the readers understood well what they were reading and that they were using their language and experiential backgrounds as well as the specific context of what they were reading. Several examples from the first, second, and third grade reading levels should illustrate this point.

At the first grade reading level, the initial sentences of the selection read: *Ahí vienen los bomberos. Mira el perro que va en el carro de los bomberos* 'Here come the firemen. Look at the dog in the firemen's car.' The word *perro* was covered. Seven children read *bombero* 'fireman' and one read *policía* 'policeman,' both of which fit the limited context that has been established (that the story is about firemen). In addition, the picture above the printed page showed several firemen but no dog. Probably the readers used the picture as well as the verbal context. In the sentence reading *Los bomberos saben lo que hay que hacer cuando hay fuego* 'The firemen know what has to be done when there is a fire,' *fuego* was one of the words that was covered. Seven readers substituted other words meaning fire: *quemazón*, *lumbre*, *incendio*. One reader substituted *peligro* 'danger,' which also conveys the general meaning of the sentence. In the sentence reading *Buenos días señor Flores* 'Good morning, Mr. Flores,' the word *señor* was deleted. Two readers read *policía Flores*, using the picture clue of a policeman to help them. Six children read *amigo* 'friend' *Flores*, which also makes sense. The sentence following that read: *¿Por qué me dices señor Flores si tu sabes que me llamo Pedro?* 'Why do you call me Mr. Flores if you know that my name is Pedro?' The word *Flores* was not visible to the children. Two children read *policía* for *Flores*. One child substituted *dijo* and then paused in his reading so that the sentence became (in terms of the child's intonation) *¿Por qué me dices señor,* *dijo, si tu sabes que me llamo Pedro?* 'Why do you call me Mister, he said, if you know that my name is Pedro?' In the sentence *Es para el carro de los bomberos* 'It (referring to a siren) is for the firemen's car,' the word *de*, which signals the possessive, was covered up. Five subjects read *Es para el carro y los bomberos* 'It is for the car and the firemen.' Since the siren would serve as a signal to the firemen, the readers' substitution does make sense and is in keeping with the meaning of the paragraph.

In the second grade selection, one clause read *de modo que todo quede igual* 'so that everything comes out even.' The word *todo* was covered up. Five readers read *de modo que se quede igual* 'so that it comes out even,' substituting the reflexive for the word *todo*. In *dijo la señorita* 'the young woman said,' six readers read *maestra* 'teacher,' *señora* 'woman,' or *mamá* 'mother,' retaining the meaning of the sentence. In the sentence *Vamos a usar estos bloques* 'We're going to use these blocks,' the word *bloques* had been covered. One reader predicted *estos clavos* 'these nails,' one substituted *tornillos* 'screws,' and one said *pedazos* 'pieces' for *bloques*. All made sense in the context of the paragraph. In the clause *para hacer tu rascacielos* 'in order to make your skyscraper,' *rascacielos* was the word the readers were supposed to predict. Five children substituted *casa* 'house,' one reader substituted *escuela* 'school,' and two children substituted *trabajo*, so that the clause would read "in order to do your work." In the sentence *Vamos a empezar con una casa pequeña* 'We'll begin with a small house,' *pequeña* 'small' was covered. Five readers used other adjectives, four predicting *grande* 'big' and one *bonita* 'pretty.' And when *un* 'a' was covered up in *un rascacielos* 'a skyscraper,' five readers substituted either *una* 'a' (in the feminine form) or *la* 'the' (in the feminine form). Since *rascacielos* is not a word commonly used by rural Mexican American children, the confusion of genders is not astonishing.

At the third grade reading level, interesting substitutions also occurred. In the clause *no había lugar* 'there was no room,' two substitutions for *lugar* were predicted a total of five times. Both *asiento* 'seat' and *espacio* 'space' were substituted. Since the story deals with people seated for a circus performance and the fact that the circus was full, both of these substitutions make sense. One sentence in the passage read *¿Qué te pasa? le preguntó* 'What is wrong with you? he asked.' The word *te* 'you' (familiar form) was covered. Three readers read *¿Qué le pasa?*, substituting the more formal "you" for the familiar. Three readers read *qué pasa*, simply omitting the missing word, so that the sentence read "What's wrong? he asked." Both make sense in Spanish, *le* having the same meaning as *te* and *qué pasa* being a common expression. One child read *qué es lo que pasa*, again conveying the same meaning ("What is it that's wrong"). In the phrase *con una nariz muy grande y muy roja* 'with a big red nose,' several words were predicted for the missing word *con* 'with.' One subject read *tenía una nariz* 'He had a nose.' Seven readers read *Y una nariz* 'and a nose,' and three read *de una nariz* 'of (or from) a nose.' All choices made sense in the context of what was being read. For *roja* 'red' the substitutions made were three other adjectives, *larga* 'large,' *bonita*, and *curiosa* 'odd or strange.' In the sentence *Hicieron una buena pareja* 'They made a good pair,' the words *escena* 'scene,' *programa* 'program,' and *fila* 'line' were substituted for *pareja*. All of these substitutions made sense when using the picture clues available and when considering the context of what was being read. In the phrase *con unos enormes zapatones* 'with some enormous shoes,' the word *los* was substituted seven times for *unos*, making the line read "with enormous shoes" or "with his enormous shoes."

These acceptable substitutions suggest the same thing that the contextual miscues do, i.e. that the readers are not limited to using graphophonic cues and that they use both what they know about Spanish and their living experiences to enable them to anticipate and to predict as they read.

## CONCLUSIONS

Spanish is a language whose sound-letter correspondences are more regular than they are in English. The children in this study evidenced considerable ability in using phoneme-grapheme correspondences in order to pronounce Spanish words. Yet they also demonstrated that they were not bound by the print, that they were able to use selected graphic cues and to construct meaningful utterances by anticipating, by predicting, by making educated "guesses." Thus, this study suggests that even in phonically regular languages, the reading process involves more than simply looking at letters and transforming them into sounds. The reading process is a creative one, and the reader uses graphophonic cues but is not limited to them.

# A Study of Oral Reading in Polish and English: A Psycholinguistic Perspective

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Second language learning does not present a new challenge to the American classroom. The challenge has been there from the beginning of public education in this country, but our current awareness of the non-native English speaking child in the classroom has been heightened through current legislation dealing with multilingual/multicultural education. Today's immigrants want to learn English quickly and efficiently; they want to be "Americanized," but they also want America to live up to its promise of valuing multiplicity and diversity in its citizenry. In short, they want to see their root culture and language respected and cherished, and herein lies one of the challenges for every American schoolteacher.

To put the situation into some perspective, some general background information may be useful. In the last decade, over three million people emigrated to the U.S. For the vast majority, who are predominantly young males and females, English is a second language. As one would expect, many learn "survival English" quickly, since the need to communicate and to transact day-to-day affairs serves as prime motivation for learning the language. For the children of immigrants, the needs arise as they branch out to the neighborhoods or begin to attend school. In school, the problem is sometimes compounded. In addition to learning English for basic communication, they are faced with another pressing task--dealing with English as a medium of instruction. As a consequence, learning to read and write in English is a major goal for immigrant students.

It is not surprising to find that next to learning English, reading instruction is the greatest source of frustration to the student as well as the teacher. Not many universities or colleges prepare future teachers for working with non-English speaking students, and even fewer demand courses in linguistics or language development to prepare the new teacher for the realities of today's classroom. Understanding how language develops, how first and second language acquisition differs, and how reading is influenced by this development would certainly support teachers in their task. Unfortunately, a great deal of misunderstanding occurs in these areas. Teaching the English language and reading instruction are not always based on the best current information. Further, poor achievement scores in reading lead some teachers to unwarranted conclusions about the non-English speaking student's intellectual potential, precipitating additional problems.

Court cases document this quite well. It would be safe to assume that these are not isolated cases restricted to students in the Southwest for whom Spanish is a first language. In 1977 in the Detroit Public Schools alone, for example, over 6,000 children were identified as non-native speakers of English representing over 70 different native languages. Among the languages represented is Polish. In the metropolitan Detroit area there are geographic pockets where Polish immigrants reside. The study detailed below was undertaken as an examination of the oral reading behavior of Polish-American children enrolled in English medium schools in Detroit. The study itself was based on the work of Kenneth Goodman (1968), who describes the reader as a user of language who engages three cueing systems simultaneously during the act of reading. These cueing systems--the graphophonic, the syntactic, and the semantic--allow the reader to scan, to predict, to test, to confirm, and ultimately to reconstruct the message encoded in print. With other psycholinguists, Goodman believes that reading is an active, thinking process and at its best will resemble creative problem solving rather than a mechanical decoding of a graphic array into its corresponding phonological representation.

According to Goodman (1970b), the implications for learning to read a second language based on an examination of psycholinguistic universals might be:

- Learning to read a second language should be easier for someone already literate in another language, regardless of how similar or dissimilar the first and second language are.
- Reading will be difficult as long as the student does not have some degree of control over the grammatical system of the second language.
- Strong semantic input will aid the acquisition of reading competence where syntactic control is weak. This suggests that the subject of reading materials should be of high interest and should relate to the background of the learners (p. 110).

In organizing the study, which involved Polish-American children reading orally a Polish as well as an English story, several questions were of concern. Among these were: How much similarity/dissimilarity is there between the two languages? Does this influence the reading of the stories? How do the students use the three language cueing systems (graphophonic, syntactic, semantic) in the reading of the stories? Is there a relationship between the use of the cueing systems and comprehension? What influence does one language have on another in reading the stories?

The students who participated in the study were fifth graders enrolled in schools where English was the medium of instruction. All were native speakers of Polish and had been in this country three years or less. Each student was audio-taped reading and retelling one English-language story and one Polish-language story. Stories were selected from readers used in reading instruction in American schools and schools in Poland.

An analysis of miscues (deviations from print) was made to determine how much meaning was preserved or lost. Each miscue was analyzed for its graphic and phonic similarity to the word in print, for its correspondence to the grammatical function of the word, and for its semantic closeness to the word. A judgment was also made about whether the other language influenced the miscue. The retelling for each story was scored, and a judgment made about how well each story was understood.

The Goodman Taxonomy of Reading Miscues was used to analyze the readings. This instrument allows a researcher to approach miscues not as random or qualitatively equal deviations but as responses cued by the reader's awareness of the language and how it operates in the act of reading. It is derived from the psycholinguistic theory which states that readers bring to bear upon printed matter the entire set of life and language experiences at their current disposal, their particular level of cognitive development, and their psychological disposition towards the topic. The scanning, the predicting, the ultimate reconstruction of the message can only be accomplished within this context.

In examining the languages it became clear that in writing and reading Polish and English share an identical directionality, and a similar, but not identical, orthography. There is not, however, in all cases a correspondence in the phonic realization of the letters. For example, the phonic realization for the letter /i/ is markedly different between the languages. In English, the letter /i/ can be short /ĭ/, long /ī/, or r- influenced /îr/. The phonic realization for /i/ in Polish, however, does not correspond to any of these. Instead, it is identical in sound to the English long /ē/. This marked difference was responsible for some of the miscues recorded.

Further, Polish is an inflectional language and much responsibility for meaning is carried by the inflectional system. Word order, though important, does not have the same critical status as it does in English. For example, one could say in Polish:

(1)a Mama upiekła chleb.
b Chleb upiekła mama.
c Mama chleb upiekła.
d Upiekła mama chleb.

and in each case the same meaning could be communicated. This is not the case in English. Translations in English for the four sentences just given would be:

(2)a Mother baked bread.
b *Bread baked mother.
c *Mother bread baked.
d *Baked mother bread.

Clearly, there is more flexibility in word order in Polish. It is not uncommon to find new English-language users still quite tied to the translation model, generating utterances such as, "What for you going there?" In Polish, this word ordering would be quite appropriate (as I think it may be across other inflectional languages).

The sound/symbol correspondence in Polish is extremely consistent when compared to English and allows readers to play the "sounding out" game quite handily. For example:

| English<br>/e/ | Polish<br>/e/ |
|---|---|
| egg | egzamin |
| cake | nagle |
| eat | elegia |
| merge | nerka |
| envelope | eleganckie |

In English, the phonic realization of /e/ is decidedly different in each instance. In Polish, however, the reader can depend on the same phonic realization for /e/ regardless of its placement in the word. A complication of Polish not as evident in English is the highly multisyllabic nature of the language which can, through a series of prefixes and suffixes, change the tone, or the aspect, of a particular root word.

Such information about the differences in languages helps us to understand the results of the study. As a group, 39.8% of the miscues generated in the English story and 55.9% in the Polish story were of high graphic similarity; that is, the miscue resembled very closely the actual word in print. Similarly, 20.9% of the miscues in the English story, but only 11.5% in the Polish story, were of low graphic similarity. The high sound/symbol relationship in Polish and the group's apparent awareness of this linguistic feature was evident and influenced the reading.

The most consistent phonemic deviation from the English text occurred in the handling of the English th sound, voiced and unvoiced. It was interesting to note, as the chart on page 24 indicates, that the rules for voicing were acquired and were used differentially, although the full phonological interpretation in English could not be given.

| TREATMENT OF th SOUNDS IN THE ENGLISH TEXT | | | |
|---|---|---|---|
| Voiced th Word in Text | Observed Response | Unvoiced th Word in Text | Observed Response |
| bothers | bodders | think | tink |
| brother | brodder | three | tree |
| mother | modder | throat | troat |
| there | dere | Thursday | Tursday |
| leather | leadder | things | tings |
| together | togedder | threw | trew |

This is evidence of a student's language learning that is generally ignored or not acknowledged by teachers. The concentration seems to be on the full phonological realization of the th sound rather than on the developmental steps representing progress towards the goal. The distortion of meaning from such miscues generally was negligible.

Very few miscues generated in either story created major syntactic changes. When analyzed for semantic change, the same held true. The knowledge students had of each language and its syntax pulled them towards preserving that syntax as much as they could. In the English story, for example, such miscues as the following occurred:

In print: That is--I mean I think just about everybody likes babies.

Student: That is--I mean I think just about everybody likeⓈ‸ babies.

In print: I still thought we should tell Mr. Barnaby, but he was rushing around giving orders to lighting crews...
Student: I still thought we should tell Mr. Barnaby, but he was rushing around giving orderⓈ‸ to lighting crewⓈ‸...

Though each of the miscues above represents a different deep structure, the surface level change did not produce an inordinate amount of meaning distortion. The miscues do reflect the subject's lack of mastery of the inflectional system of English, which is quite understandable considering the length of residence in the U.S.

Probably the most common deviation from print in English is represented by the following examples:

In print: Be at the station with that fine baby a week from Saturday...

Student: Be at **the** station with that fine baby a week from Saturday...

In print: In a little while he was asleep.

Student: In **a** little while he was asleep.

Indefinite and definite articles are not required in Polish syntax. These omissions in English do not represent any deep structure change, but, rather, the operation of an alternate rule in producing such sentences. Such omissions did not disrupt the meaning.

Interestingly, the miscues in Polish which led to unacceptability either in syntax or in semantics, or in both, were, more often than not, a result of the complex, highly inflectional, multisyllabic features of the language itself. In the following example,

In print: ... i pokłonił mu się z czapczyskiem w ręce.
'... and he bowed before him with his cap in his hands.'

Student: ... i pokłonił mu się z $czapniskiem w ręce.
'... and he bowed before him with his [non-word but correct inflectional ending] in his hands.'

the student produced a syntactically intact miscue (note the inflection). The dollar sign indicates the miscue was a non-word and, so, unacceptable semantically. An added confusion for the reader in this instance is that the word in print represents a diminutive form of the more basic word, czapka. By contrast, the following miscue preserves the base word but changes the inflectional ending:

In print: Stanęło zaś na tym przed rozpoczęcium gry...
'And so it happened that before the beginning of play...'

Student: Stanęło zaś na tym przed rozpoczęcium gry...
'And so it happened that before the beginning [inappropriate inflectional ending in Polish but same root word] of play...'

The point that miscue analysis allows one to make here is that a surface level shift, even when it reflects a different deep structure, does not always lead to great losses of comprehension. Indeed, in this instance, one could safely assume that no meaning was lost.

The Polish story caused readers to be more vulnerable to losing or garbling the deep structure. Several factors contributed to this. Among these were the highly multisyllabic nature of the language, the regional language in the story, and the extraordinarily long sentences, some with as many as 39 words. It would be quite easy to plead that with this particular story, the miscues were more a reaction to the author's writing style than a comment on the reader's ability to process the language. These factors need to be accounted for in stories in any language, of course.

One of the most significant results of this study was that it reinforced so thoroughly and unequivocally the principles of psycholinguistic theory. The Polish story selected for the study represented language used in the southwestern mining areas of Poland. The story contained regional words as well as inflections specific to that region. The students reading the story were mainly from the more cosmopolitan areas of Poland. Nowhere was it clearer than in the reading of that Polish story that when the content of printed matter falls out of the range of a reader's experience and when, further, the language in which the message is encoded represents a language that smacks both of archaic usage and of usage restricted to a particular geographic region, the ability of the reader to sample, to predict, to confirm, and to comprehend will be hampered. Psycholinguists have postulated, and reading miscue research has proven, that the closer the experience and language of the reader are to that of the author, the more reading for meaning will be facilitated.

Another dramatic example of what happens to a reader who is convinced that reading consists simply of mechanical decoding or of striving for the most accurate oral rendition of what appears in print occurred with one subject in the study. In the reading of the Polish story, the student who generated the fewest miscues and had the fewest miscues per hundred words (MPHW) also had the *lowest* retelling score. This is a clear example of what Wardhaugh (1969) refers to as "barking at print." By contrast, for the same story, the student who generated the largest total number of miscues and the highest rate of MPHW had the *highest* retelling score. Clearly, the ability to read for meaning consists of more than the accurate production of sounds for each printed symbol.

Learning a new language is bound by developmental principles which are similar but not identical to learning a first language. Whatever the developmental stage, it will have an effect on the oral reading performance. As with first language acquisition, productive control will follow receptive control, and much exposure to the oral language through listening and many opportunities to speak the language must precede instruction in reading and writing. In addition, teachers need to assess oral reading using information garnered by psycholinguists about how language is acquired and how these principles become evident in the reading task.

Research in miscue analysis continues to confirm the view that the reading process is complex. Individuals utilize all three systems of language (graphophonic, syntactic, semantic) as well as their life and language experiences in each reading act. Readers continuously hypothesize about the structures, the words, the meanings they expect to find in a graphic array. The more predictable the printed matter is, the easier it will be for the reader to process print, to arrive at meaning, and to experience the psychologically uplifting feeling of being a competent language user.

# Reading: A Universal Process

## A Study of Yiddish-English Bilingual Readers

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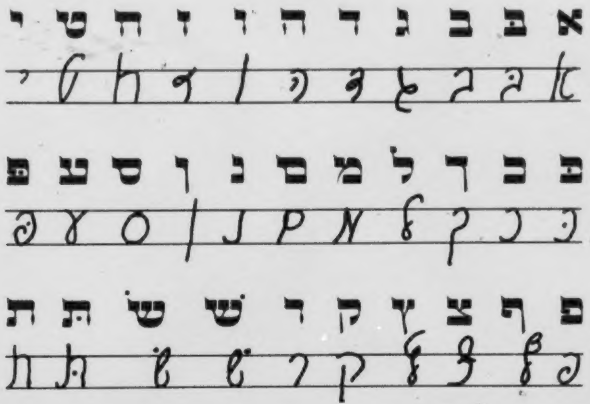
For the psycholinguist concerned with the study of how people acquire and use language, certain truths seem self-evident: that the speaking, reading, and writing processes interrelate language and human thought, that the function of language is primarily to transfer meaning from one person to another, and that there are universal features in the acquisition of human language skills. Kenneth Goodman's statement that "the essential characteristics of the reading process are universal (1970b:104)" has stimulated investigations which have attempted to test this observation with readers from different languages. The particular study under discussion here examined oral reading performances in two languages of persons who were orally learning to read simultaneously in these languages. The study was undertaken to investigate the theory that there is basically a single process involved in making sense of the written word--a process relatively immune to language shape or structure.

Specifically, questions about how the reading process in a bilingual child differed or resembled the process in a monolingual child were considered. Can the process that works for one language be transferred to another language? When children become functionally equipped in their first language, will there be interference when they attempt to learn to deal with a new set of decoding and encoding rules? Do features of the reading process--sampling, predicting, testing, confirming--appear in all languages? Do cue systems--graphophonic, syntactic, semantic--operate in all languages? What is the role of the children's culture and experiences, i.e. do they bring these elements with them to the task of making sense out of print?

Such underlying questions prompted this study of Yiddish-speaking Chassidic children studying English as a second language. Not only did these children understand, speak, and read in two languages, but their earliest experience with print was with the Hebrew language--a third language which they neither spoke nor comprehended completely.

The Chassidim, a relatively small population in the U.S., are an ultra-religious Jewish sect whose mother tongue is Yiddish. Their children are prohibited from attending secular schools, attending, instead, their own cheders, where they are inculcated with Chassidic religious values. Yiddish is the language of instruction in these schools, yet Hebrew, as indicated, is the first written language taught to the youngsters. The Hebrew alphabet and pronunciation, as it happens, are used in Yiddish and will later become the medium of writing in Yiddish. Tradition requires that Chassidic children recite their prayers and Torah (Genesis through Deuteronomy in the Old Testament) as soon as possible in the "Holy Language," which is Hebrew. The efficacy of the recitation depends primarily on correct pronunciation, not on understanding. The children essentially neither speak nor understand Hebrew since the "Holy Tongue" is considered too holy for profane use and therefore is forbidden for everyday communication. Only much later will the male child be expected to make sense of the chanted Hebrew prayers which he will recite, accompanied by rhythmic swaying of the body. So for these children, the first formal experience with print is mystical and religious, and comprehended only in a limited way.

Having mastered this skill of prayer recitation, the children are ready for the rest of the curriculum which means reading, writing, and speaking in Yiddish--their first language of communication. Yiddish, a language spoken by Jewish people for about a thousand years, originated in ghettos along the Rhine and Danube rivers where Jewish refugees fled to escape religious persecution. While evolving from a variety of dialects of German, it became, by the 16th century, a language independent from German, though continually influenced by it. Slavic influence on the language also has been important, especially in vocabulary. Additionally, Hebrew influences are evident, and, in fact, Yiddish is written in the Hebrew alphabet. Yiddish is read and written from right to left. The letters are unlike those in the Roman alphabet, although, in fact, the word alphabet derives from "aleph," the name of the first Hebrew letter, and from "beth," the name of the second Hebrew letter. Just as in English print, the words in Yiddish print use disconnected letters. In handwritten Yiddish words the letters are also disconnected. This further emphasizes letter-sound correspondence. Books and newspapers begin at the last page, from the English point of view. There are no capital letters, although some letters take a special form when they terminate a word. The Hebrew alphabet brings to Yiddish a number of sounds which have no parallel in English; for example, kh or ch as in the German nacht or the Yiddish final sound D+S which becomes TS while it becomes DZ in English. In the following illustration of the Hebrew alphabet, we see the symbol for the printed letter just above the symbol for the same letter in script.



NOTE: The dots show where to start the stroke in the handwritten letters.

Like its German grammatical model, there are more inflections in Yiddish. Relfexive verbs, less use of function words, and more complicated syntactic structures than in English are common.

This study was devoted to the observable process of oral reading of six bilingual subjects ranging in age from seven to eight (Hodes, 1976). The children were native Americans enrolled in private Chassidic schools. Yiddish was spoken in their homes and by their teachers except during four half-days of each week which were devoted to English instruction. Although all six subjects were in the primary grades, they had had different amounts of formal English instruction, but for all of them their earliest instruction began at age five with the Hebrew alphabet and the chanting of Hebrew sounds chorally or individually.

The study had two major formal features. First, young bilingual readers were presented with two languages using opposite directionality. Second, the analysis of reading performance was based on the Goodman-Burke (1972) *Reading*

*Miscue Inventory (RMI)*, which has a descriptive psycholinguistic orientation. The *RMI* was used as the instrument for analysis. Comprehension or Retelling guidelines developed in advance of each story served to minimize bias in determining Retelling scores. The categories of the *RMI* did not require significant adjustments or accommodations to the peculiar features of the Yiddish language. Miscues were transliterated from Yiddish to English to make them accessible to the general reader.

The six subjects read stories from a group of basal reading texts in English and from a non-overlapping set of selected books in Yiddish. Upon completion of the oral reading tasks, subjects retold the stories in their own words. When the children were asked in advance which language they would prefer for their first oral reading selection, they invariably answered "Yiddish." They read the Yiddish story more rapidly than they did the English story, and they seemed able to handle more complex material in Yiddish than in English.

The data were tape recorded and analyzed using two perspectives. A computer program designed for *RMI* statistical analysis yielded individual data sheets for the subjects in each language. This program organized scores for miscue percentages in each category of the *RMI*. Another computer program was used to do a regression analysis on the performance of the group. This program yielded means, standard deviations, and regression information.

Probably the most important finding of the study was that the scoring of Yiddish-English readers by use of the *RMI* coding sheet gave high correlation for a foreign language. This Inventory, rooted in the Goodman Taxonomy, can easily be used by a classroom teacher. It can provide a reading profile of a child which shows the child's use of the cue sub-systems and how efficiently the child makes sense of print. The miscue coding sheet shows the child's use of graphophonic and syntactic strategy clues, how much meaning has been disrupted by miscues, and how certain miscues affect comprehension. It includes in its analysis the child's correction--and overcorrection--strategies.

Another finding consistent with psycholinguistic theory was that no significant influence on reading efficiency was found to be associated with alphabetic or directional switch. In only one instance did a subject turn a page in an inappropriate direction, but he corrected himself immediately. Once the reading had begun, no subject ever hesitated over the reading direction in either language. In each case the children were handed the book as though they were English reading books. Once they saw Yiddish texts, they merely flipped them over and began to read. This finding supports K. Goodman's notions (1970b) that the directionality of the graphic sequence is of little importance in the basic reading process, and that readers are able to deal with a great deal of irregularity and variability in orthographies.

The following chart represents a set of typical miscues from which we could observe some details that support the thesis of a universal processing of print. The second column represents the transliterated oral responses, which is the way the subject pronounced the word. (Dollar signs preceding a supposed word indicate that it is actually a non-word.) The third column represents the word (translation follows) as it appeared in the text.

| Miscue Number | Reader's Oral Response (OR) | Expected Response (ER)--Text |
|---|---|---|
| 1. | $ Forelung | Forshtelung 'presentation' |
| 2. | Di 'the' | Der 'the' |
| 3. | $ Fardict | Forteydict 'defended' |
| 4. | Gerbracht 'brought' | Gefirt 'led' |
| 5. | $ Udergafen | Uder gefangen 'or captured' |
| 6. | Fun 'than/of' | Vi 'than' |
| 7. | $ Geratmit | Geratevet 'rescued' |
| 8. | Ir 'to her' | In 'in' |

| Miscue Number | Reader's Oral Response (OR) | Expected Response (ER)--Text |
|---|---|---|
| 9. | Oif 'on' | In 'in' |
| 10. | $ Boyit | Baruikt 'pacified' |
| 11. | Shoin 'already' | Balt 'soon' |
| 12. | Areyn 'into' | Arena 'arena' |

Both Yiddish and English miscues showed a strong pull toward accurate pronunciation of the beginning and the end of multisyllabic words. In general, for all miscues the reliance on graphophonic similarities far outweighed the use of any other strategy, perhaps reflecting the phonic "overkill" of early training on exact decoding. Miscue (2), which represents an article inflected for gender or number, was frequently corrected, illustrating the phenomenon of overcorrection. Miscue (6) was also a typical miscue and was frequently overcorrected. Miscue (9) may be simply an idiomatic expression. Only scholarly Yiddish speakers do not interchange these words, and it is possible that seven-year-olds were not yet aware of that subtle aspect of the language.

Miscue (4) exemplifies a miscue that retains meaning. In the story, the soldier "was led"; the child said the soldier "was brought," which scarcely altered the meaning. Miscue (8) reflected Yiddish syntax. Children almost automatically used ir following an auxiliary verb, but most of the readers returned and corrected this reading. This miscue did disrupt meaning and caused the readers discomfort. Miscue (11) showed prediction capability. Miscue (12) made sense graphophonically and semantically. Not a single child used the word arena in the retelling of the story, yet each of them understood that the gladiator did face the lion in a ring or circus. Arena may not be in the living vocabulary of a Chassidic child living in Brooklyn, but the word areyn (meaning into) did make sense to them.

As in most other miscue studies, dialect miscues on a phonological level caused little disruption in terms of meaning. Yiddish vocabulary includes Hebrew words, and in Hebrew the custom is to not explicitly indicate vowels in the spelling of words. For instance, one of the main words in one story was David spelled DVD (313). The pronunciation varied from reader to reader, but the sense did not.

In the pilot study a story from a non-standard Yiddish reader, using Galician spelling, was presented to a Lubovitcher child (using Lithuanian dialect). In the story the main characters were a boy and his little dog. Standard Yiddish (Lithuanian dialect) for dog is spelled and pronounced "hoont," but the spelling and pronunciation in Galician dialect is "hint." The child decoded "hint" exactly, each time the word appeared. But when he retold the story he referred to "hant," which means hand. "Hant" came closer to "hint," and he attempted to make sense out of a little boy who played with his little hand. Even though he had to strain the context when he said the boy fed his little hand, when asked how the little boy did this, the child put his own hand into his mouth as if to illustrate that the boy fed himself with his little hand. The idea made sense to him, just as removing the blindfold from a doll might have made sense to five-year-olds who were instructed to "make the doll easy to see" in the well-known language acquisition studies conducted by Carol Chomsky (1969).

Another finding that supports previous miscue research is that a high score in reading accuracy is not a prerequisite to efficient reading. The child who had the lowest retelling score, the least proficient of the readers in Yiddish (as well as in English), made the fewest miscues in Yiddish and was most word-bound in her English reading. She was a trained decoder. The most proficient reader, again in both languages, had a high percentage of omissions. He did not stop to correct; he was too busy getting the meaning.

In general, the findings suggest that the "chanting" technique and early instructional emphasis on the mechanical nature of sounds as related to print had no beneficial influence on the way these readers attempted to get at meaning. In general, there were relatively few corrections, but the oral performance did not always give an accurate picture of the degree of understanding as evidenced from the retellings. This finding may suggest that bilingual readers, when they hear themselves reading in a second language, cannot always produce an answer to the question, "Is this making sense," so they do not correct. Nor do they necessarily know how to correct. In the case of Chassidic children, another factor should be considered--the rhythmical flow of language. When "reading" occurred, there had to be a steady rhythmical quality. Interruptions, regressions, and corrections all interfered with the chanting of oral recitation as they had learned it.

Another important implication that was evidenced in the retelling involved the significance of cultural factors. Comprehension depends partially on the previous experiences a child brings to the printed page. One of the Yiddish stories was called "Lincoln and the Jewish Soldier." The story was quite lengthy (five pages of non-illustrated text). The subjects read through episodes on the Civil War, including a battle involving the death of a northern Jewish soldier whose bravery on the field was commemorated by a monument. In response to the questions, "Did you like the story," and "Why," the answers were always "Yes" and "Because the soldier was Jewish." In the retelling all of the readers mentioned the dedication of a commemorative monument. When asked, "Why was the monument erected for the Jewish soldier," invariably the readers returned to an early incident in the story when the Jewish soldier went AWOL to see his dying mother and to receive her deathbed blessings. The answer was "Because he was good and went to see his dying mother for her blessing." Who was Lincoln? What of the battle? No contextual clues. But a son's duty to his mother made sense to these children.

This study, then, focused on describing children's reading strategies. The evidence presented supports the psycholinguistic view of the reading process in a language other than English.

# First Language Illiteracy— Second Language Reading: A Case Study

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## INTRODUCTION

There is no stigma attached to being illiterate in a society where no one else can read. There is some involved inconvenience in being illiterate in a society where only government officials can read. But there is embarrassment and terror in being illiterate in a society where everyone else reads and where, at any time, those in authority may demand that you read.

The elementary classroom in American public schools has the tendency to become a world of its own. It is in this environment that many children are first exposed to extended reading, that non-English speakers are exposed to English reading, and that some children recognize that they cannot read. I emphasize the somewhat foreboding and certainly separate world of the school because this is often the social setting for formal reading. Reading, like any other language form, is entwined with and meaningful in a social context. Ideally, that context involves readers and their experiences, as well as the author and his design. Sometimes an interested observer is also present. But too often an interfering teacher, and a critical audience, are up front. These realities are the ones that make understandable the performance of the main subjects of this study.

The purpose of the study I will describe was to examine in depth the reading strategies in a second language of two 12-year-olds who are illiterate in their first language. These strategies are compared with those of a subject of similar background who is literate in her first language, as well as with strategies of subjects who are native speakers of English. The main questions are (1) what are the second language reading strategies of the first language illiterate students and (2) how are they different from those of other second language and first language readers?

Most studies that address themselves to reading in second language learners are those where reading scores of groups of students who were taught to read first in their native language and then in the second language are compared with reading scores of students taught to read only in their second language. These studies tell little about differences in reading strategies, and as such are more useful to program planners than to teachers faced with particular situations of second language readers or to researchers. In contrast, this study concentrates on reading strategies of individual first language illiterate students.

Literacy has different meaning for different ages and situations, and there is no clear cut line between it and illiteracy. For this study I used an extreme definition of illiteracy: none of the first language illiterate students could recognize their own names when written in their first language. In this way I eliminated a possible influence of earlier literacy that might be found in first language illiterate students who had once read their language but who then, from disuse, had forgotten how to do so.

The research tool used in the study is miscue analysis, which allows a researcher to categorize, quantify, and correlate deviations in oral reading from text items. The procedure involves having a student read aloud to a researcher who, without interrupting, records the reading on tape. When the oral reading is concluded, students are asked to tell all they remembered about the story. The researcher may then ask questions based only on the students' retelling. The researcher then codes the deviations from the text according to a taxonomy developed by K. Goodman. This procedure and analysis method constitute one of the few reading research tools with sufficient linguistic sophistication to allow comparison between reading strategies and features of second language acquisition.

Background information on the research situation is important for understanding the study results, as well as for cautioning against false analogies. The students in this study came to English speaking schools after second grade. They were Arabic speaking immigrant children from towns in south Lebanon who had moved with their families to a working class suburb of Detroit. Their fathers worked in factories and small stores and were literate but not highly educated in Arabic. Their mothers had much less formal education and stayed at home. They had all come to Michigan within the last five years.

Sabah and Husein, the students illiterate in Arabic, had been in the U.S. four and five years respectively at the time of the study. They spoke accentless, although not totally standard, English. The reasons for the students not learning to read in Arabic were family movement for the boy and a heart problem for the girl. School attendance in Lebanon is widespread, but not mandatory. The students' families had kept them at home or moving. Fadwa, an 11-year-old student literate in Arabic, had been in this country barely a year at the time of the study. She came from the same town and socioeconomic background as the other two. Her progress the first year in American schools was somewhat below average for second language learners. In Lebanon, she had attended school for four years and could read, in Arabic, selections of greater complexity than the English reading selections of this research. She was much less fluent in English than the others. (On the *Michigan Test of Oral English*, Sabah and Husein scored 210 and 214 respectively out of a possible 217 points. Fadwa scored 162. The difference was mostly due to syntactic errors made by the more recently arrived student.) This difference in oral English was purposeful. I chose it to undercut the allegation that acquisition of reading by second language learners depends principally on their acquisition of the spoken form of the language.

In another sense I did not choose the discrepancy in oral English between the first language illiterate and the first language literate students, and this is where the motivation for the research comes from. It took the first language illiterate students four to five years in American schools before they could read some of the simplest stories. Neither of these students are dull. Thus, another research question arises: is there anything in their reading that can explain this delay?

The reading selections used in this study were partly determined by the first language illiterate students. According to miscue procedure, the reading selections should be new to the students, they should be of sufficient difficulty to generate a moderate number of miscues, they should be of sufficient length to insure availability of syntactic and semantic context (about 500 words minimum), and they should be a semantically complete unit. Of the three selections used, *The Three Little Pigs* was not new to the first language illiterate students. Both it and the *Sad Onion* had pictures on each page. These were not ideal for miscue analysis, then, but Husein refused to attempt the stories without pictures, and the one familiar story kept him going. (Such modification, while undesirable, was necessary to accommodate the subjects. Two other first language illiterate students were unable to complete even these simple stories.) Together the first two selections were over 500 words. The third selection, *The Magic Pot*, was new to all the students. It was chosen by Sabah, was over 500 words, and its pictures were few and unclear. Thus, it fits miscue standards better.

A final note on my qualifications as researcher may help. I have taught school in south Lebanon where the children come from, and I speak Arabic. When I taped the readings, I had been working for two years in the elementary school near Detroit which Sabah, Husein, and Fadwa attended, and I knew them well.

## DATA AND CORRELATIONS

In analyzing the second language reading strategies of the first language illiterate students, I will look first at their major strategies and compare these with the data of the first language literate student as well as with data of native English speakers' reading. Then I will consider the second language oral strengths of the first language illiterate students, and if and how these are expressed in their reading. Finally, I will examine an unusual sample of a first language illiterate student's reading, and see how this relates to the more common samples as well as to data of first language readers.

In the passages of students' reading which are included to illustrate various points, the usual miscue notation system is used.* The dialect of second language learners is "interlanguage" (well defined in the research of Selinker) or overgeneralized syntactic forms showing a particular stage of development in acquisition of English. Dialect miscues are noted, but not counted in the general statistics as they reflect the spoken language of the reader more than reading strategy. An example of this would be:

    boy say
The boys said, "Hello."

The null form for the plural and the simple present form for the past tense situation are common syntactic features of English interlanguage produced by second language learners from various language backgrounds. Phonological deviations occasioned by the influence of the first language (for example, a native Arabic speaker pronouncing the English word pot as bot because of phonological interference from the first language) are not counted as miscues for the same reason that the interlanguage syntactic variations aren't. As mentioned earlier, miscue analysis allows for the separation of oral language learning data from reading process data. This is essential for research in reading strategies of second language learners.

### *Major Strategies of First Language Illiterate Readers*

The following annotated passages are samples from the oral reading of Sabah and Fadwa. They are contrasted to emphasize the differences in reading strategies.

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*A circle around part of the text means the student omitted it. A word or words above part of the text indicates that the student substituted that for the text beneath. A partial or full word substitution, with a dash after it, means that the student did not complete the word and hesitated (not coded as a miscue). A word written above the text with a $ in front of it signifies a non-word substitution by the reader. The symbol ⓒ stands for "corrected" and means that the student miscued but then corrected to the text. A (uc) stands for "uncorrected" and means that the student miscued and did not correct. RS stands for "running start"--a particular word was repeated (not coded). And ⓓ stands for dialect.

**Sabah**

The father came to see what the
is
noise was all about. His eyes
RS
filled with tears. The tears
rolled down his cheeks. And he
began to cry...

**Fadwa**

The father came to see what the noise
RS
was all about. His eyes filled with
deers RS de- lowered
tears. The tears rolled down his
ⓓ ⓓ begin
cheek ⓢ. And he began to cry...

As would be expected, Fadwa, who had been speaking English for less than a year, had more dialect miscues. The percentages of total miscues which can be attributed to dialect are: Sabah=7%; Husein=6%; Fadwa=27%.

What shows up most clearly in these passages is that omission was a major strategy of Sabah. This is confirmed by the data of the first story, where 57% of all her miscues were omissions, and in the second story, where 64% of her miscues were omissions. Not all these omissions resulted in disruptions of meaning as they did in the above passage. For example,

Once upon a time there was a big round onion

leaves an acceptable sentence. However, most of Sabah's omissions (77% in both stories) did result in semantically unacceptable sentences. Of these omissions, none in the first story, and only 13% of them in the second story, were corrected.

In contrast, Fadwa's miscues included only 6% omissions. All these omissions resulted in semantically unacceptable sentences, but they were also all self-corrected. Omission, then, was only a minor strategy for Fadwa. Her main strategy was the substitution of non-words. Of her total miscues, 47% were non-words. It is important to note that many of her non-words maintained English syntax. For example,

$slaked
The cook sliced it.

Neither Sabah nor Husein ever produced non-words in their reading. The difference in familiarity with English words might explain why Fadwa, but not Sabah or Husein, produced non-words when reading. However, it is also interesting to look at the production of non-words by native speakers of English in their reading.

The following table summarizes percentages of miscues which were non-words or omissions for the students in this study along with data from a miscue study of native speakers of English (K. Goodman and Burke, 1973:54).

| | Sabah | Husein | Fadwa | Detroit 4th grade |
|---|---|---|---|---|
| | (1st language illiterate) | | (1st language literate) | (native English) |
| non-words | -0- | -0- | 47% | 13% |
| omissions | 60% | 18% | 6% | 16% (low prof) |

In a miscue study of native English-speaking second, fourth, sixth, eighth, and tenth graders in Detroit city public schools, all the groups produced non-words in their reading. In the upper grades the percent of miscues that were non-words increased with story difficulty to 38.5% for a low proficiency tenth grade group reading a difficult selection. But of total miscues, the mean percent of non-word miscues was 13% for fourth graders and 12% for sixth graders (K. Goodman and Burke, 1973:84). These percentages were much lower than Fadwa's 47% non-word miscues. Still, it is clear that production of non-words is not a strategy reserved for first language literate second language readers.

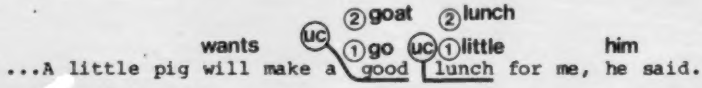
The data of the native English readers further relate percentages of miscues that are non-words and omissions among low-proficiency readers. The following table shows that "low proficiency second graders, and to a lesser extent low fourth graders, show a strong tendency to omit rather than generate non-words" (K. Goodman and Burke, 1973:54).

Percentage of Omission and Non-word Miscues by Low Readers

| grade | 2 | 4 | 6 | 8 | 10 |
|---|---|---|---|---|---|
| omission | 20.5 | 16.5 | 10.6 | 10.7 | 6.4 |
| non-words | 2.4 | 4.3 | 8.4 | 9.8 | 16.8 |

"Compared to average and high readers, there is a tendency for lower grade low proficiency groups to omit rather than produce non-words, so the groups have low percents of non-words. Among low groups, each grade has a successively higher rate of non-words" (K. Goodman and Burke, 1973:85). Thus, Sabah's reading strategy of omitting words and never producing non-words was similar to that of low proficiency second grade American born readers.

The other first language illiterate reader, Husein, omitted for 18% of his miscues (between the low second and fourth grade omission percentages), and he also never produced non-words. Yet omission did not stand out as his major strategy, which was substitution of real words, half of which retain the syntax, less than a quarter of which retain meaning.



...A little pig will make a good lunch for me, he said.

At times it appeared that Husein was calling out words that had only the first letter in common with the text. In fact, 49% of Husein's miscues had only one graphic feature in common with the text--the first letter. Of these miscues, 69% were syntactically unacceptable, and 85% were semantically unacceptable.

On a proximity rating of 0 to 9, with 9 being an allolog, Husein's graphic proximity rate was 3.9. Sabah's proximity score was 3.7. Fadwa's proximity rating was 6.6, made up mostly of non-words that were graphically close to the text.

According to the Detroit miscue study of first language readers, fourth graders averaged 5.4 on graphic proximity, and sixth graders averaged 5.6. All grade levels' graphic proximity ranges were within 4.5 to 6.2 except for one group. This exceptional group was the lower proficiency second graders, whose mean was 3.6 (K. Goodman and Burke, 1973:52).

To summarize the first section of data, Sabah's main reading strategy was the omission of parts of the text, Husein's was the substitution of words with only the first letter in common, and Fadwa's was the substitution of non-words. Compared to native English speakers' reading, the strategies of Sabah and Husein showed the greatest similarity to strategies of low proficiency second graders.

*Oral Second Language Strengths and Reading Strategies*

The objective of study in this article is the effect of first language illiteracy on second language reading. However, the first language illiterate subjects here did have strengths in understanding and speaking the second language. In this second part of data presentation and analysis, I will look at the strengths the first language illiterate students had in their second language and how these were expressed in their reading.

As mentioned previously, Sabah and Husein had been in the U.S. for over four years and speak accentless English. In fact, substitute teachers were often not aware that they were foreign born. Fadwa, who had only been exposed to English for a year, could communicate on general topics, but her English was clearly the English of a second language learner who made the usual syntactic overgeneralizations (Dulay and Burt, 1974) (null form for plural, lack of past tense marker, confusion with articles, limited vocabulary), and had clear phonological interference from Arabic. Sabah's and Husein's strengths in English, then, were their refined command of English phonology, syntax, and semantics. Fadwa had much less control over appropriate forms of English syntax and much less breadth in English semantics.

Two of the main categories for analyzing miscues are the syntactic and semantic acceptability of the miscues. Syntactic acceptability refers to English organization of grammatical function. Thus, the example,

fly deers
Her eyes filled with tears

is syntactically acceptable. By the nature of language, semantic acceptability implies syntactic acceptability, but as with the above example, the syntactically acceptable miscues are not necessarily semantically acceptable. Therefore, I will look first at syntactic acceptability.

The following table summarizes the data on miscues for syntactic acceptability. I include the comparison scores for second grade native speakers of English both because the reading selections are similar to this level and for general comparison purposes (K. Goodman and Burke, 1973:49). The native English fourth and sixth graders are about the same age as the second language students in the study.

Percentage of Syntactically Acceptable Miscues

| Sabah | Husein | Fadwa | 2nd grade | 4th grade | 6th grade |
|---|---|---|---|---|---|
| | | | | (low-average-high proficiency) | |
| 32 | 47 | 82 | 44-64-59 | 47-54-69 | 42-77-66 |

Sabah's relatively low score was partly the result of her numerous omissions, most of which resulted in syntactically unacceptable structures. Husein's score was higher, partly because his substitutions, wild though they may have seemed, were often noun for noun and therefore syntactically acceptable. What was unusual among the second language readers was Fadwa's high score. This was largely the result of her frequent non-word, though syntactically acceptable, miscuing. What is clear from these figures is that Sabah and Husein, who controlled English syntax better than Fadwa when speaking, did not make use of this control to an even average extent when reading. Instead, it was Fadwa who retained syntax to a high degree in reading. This needs to be qualified, for, as mentioned before, syntax in miscue study is not a precise or number specific system, but rather a general order of parts of speech. Fadwa seemed to adhere to this ordered system in her miscues to a much greater extent than the English fluent but first language illiterate students.

Building on syntactic acceptability is semantic acceptability. The table on page 38 summarizes the percentage of total miscues that were semantically acceptable (native English scores by grade level, K. Goodman and C. Burke, 1973:49).

Percentage of Semantically Acceptable Miscues

| Sabah | Husein | Fadwa | 2nd grade | 4th grade | 6th grade |
|---|---|---|---|---|---|
| | | | (low-average-high proficiency) | | |
| 15 | 21 | 16 | 37-42-49 | 34-36-55 | 26-66-41 |

Again the major strategies of the students in this study mediate strongly against higher scores here. Sabah's omissions left few semantically acceptable sentences, Husein's wild word calling totally disrupted meaning, and Fadwa's extreme use of non-words showed up in her low score here. However, the significance of Fadwa's use of non-words is not clear cut. Sometimes readers will use the same non-words in the retelling as they used in the story and be able to give a similar meaning for the non-word as for the real word in the story. For example, Fadwa talked about the $rivery in her retelling of *The Magic Pot*. She explained that the $rivery had wings, came to people in their dreams, scared little babies in their sleep, and that a particular $rivery had given the magic pot to the girl in the story. She obviously had a clear understanding of the word "fairy," but not its English pronunciation. However, since it was impossible to check each non-word in a student's reading for concept background, a general decision of non-semantic acceptance was made. Thus, Fadwa's low score here was not the last word on her comprehension. Nor, perhaps, was Sabah's.

Contrasting English strengths with reading performance, a less extreme but similar situation prevailed in semantic acceptability as it did in syntactic acceptability. The first language illiterate students, despite their far superior command of semantics in English, scored close to Fadwa in this respect. Again it appears they were unable to express their semantic strength in English through the reading process.

According to the extensive Detroit miscue study, semantic acceptability correlates most closely with comprehension (K. Goodman and Burke, 1973:58). After all, the purpose of reading is to get meaning from print, and so the ultimate test of reading should be one of comprehension. The retelling and questioning sections of the data are where comprehension is directly expressed. In the case of Sabah, Husein, and Fadwa, however, the retellings were not that enlightening. All understood the main events of the stories and were able to tell who the main characters were. None were able to develop the characters or speculate on motivation, but then the simplicity of the stories mediated against this. Only with the third selection were the readers able to develop character and use this to explain events. (This will be discussed in the last section of data analysis.) But even here it was very difficult to evaluate retellings in such a way that those of different readers could be compared for quality. (The pictures of the first two stories further complicate evaluation of this section.)

In miscue analysis, a system of evaluating retellings involves assigning points for characters, events, plot, theme, character development, and misconceptions. This is the least satisfactory part of the miscue process, according to its originators. It is also the most difficult part to evaluate fairly because so much depends on the researcher. Still, if a researcher has a particular question concerning whether a reader understood a certain concept, the only place an answer can be found is in the retelling or in the questions based on the retelling. Thus, the retelling is critical for checking comprehension on specific points. But for comparing comprehension of different readers, the retellings are valid only in a gross way.

Returning to the reading process itself, in miscue analysis there is a measure of quality that approaches the critical problem of comprehension. This measure is made up of a combination of the percent of semantically acceptable miscues plus those which were unacceptable but successfully corrected by the reader. This combination score, based on the two clear indices of concern for construction of meaning, is referred to as the comprehending score.

The following table lists the comprehending scores of the subjects of this study.

Comprehending Scores

| | Sabah | Husein | Fadwa |
|---|---|---|---|
| semantically acceptable | 15 | 21 | 16 |
| semantically unacceptable, corrected | 6 | 10 | 28 |
| comprehending | 21 | 31 | 44 |

The mean comprehending scores for the Detroit native English speakers were higher than these scores (second=63, fourth=63, sixth=57) (K. Goodman and Burke, 1973:340). But the range of the Detroit native speakers' was from 17 to 100, which accommodates the second language learners' scores in this study.

Even more interesting than outside comparison is the comparison of components of the comprehending score of the first language illiterate students with that of the first language literate student. They all had semantic acceptability percentages in a close range, but Fadwa had a much higher comprehending score, due to her correcting of semantically unacceptable miscues.

Corrections result when readers make miscues, recognize that they have made them, and then correct. For total corrections, including correction of semantically acceptable miscues, Sabah had an average of 7.5% on two stories, Husein corrected 11% of his miscues, and Fadwa corrected 30% of her miscues. Again the first language illiterate and the first language literate students' data were very dissimilar. Fadwa corrected at a rate close to that of the fourth grade students in the Detroit study (30.7%) (K. Goodman and Burke, 1973:44), which represented a peak in correction percentages for native English speakers. Sabah and Husein corrected much less often.

Looking more closely at the few self-corrections in Sabah's reading, it is interesting to note that they occurred in bunches. One such section showing Sabah's self-correcting is the following two sentences from *The Three Little Pigs*.

ⓒ the
So he huffed and he puffed and he huffed and he puffed.

ⓓ blew
But the wolf couldn't blow the house in.

RS ⓒ the
The wolf got on top of the house...

Sabah corrected two miscues here. Besides being semantically unacceptable, both miscues had another feature in common, namely, both were semantically acceptable with the earlier part of the sentence.

Considering all Sabah's miscues from the first two stories, 28% were semantically acceptable with the prior part of the sentence. This is unusually high because the vast number of her miscues were omissions which did not qualify as acceptable with prior sentence content. Of Sabah's non-omission miscues, 87% were semantically acceptable with previous contents alone. This indicates that when she verbally miscued, she was building on what came before. In this restricted sense, Sabah was able to use her semantic competence during the reading process.

Sixteen percent of Husein's miscues were acceptable with earlier parts of the sentence. Unlike Sabah's, most of Husein's miscues were truly unrelated to what had been mentioned previously in the text.

Going back to Sabah's reading and looking only at what was corrected, a clear pattern emerges. All Sabah's corrections were of miscues semantically acceptable with the previous part of the sentence, but not the following part. Sabah of course made many miscues which she did not correct, but of the total pool of miscues that were acceptable only with prior sentence content, she corrected 50% of them. On the surface, then, Sabah had the overriding tendency towards omission in her oral reading. The omission process was even more pervasive than the percentages suggest, since miscue analysis only counts the first occurrence of omission of a particular word. Simple texts repeat the same words often, and these words tended to be omitted repeatedly by Sabah. Despite this, when Sabah changed strategies, even for a few lines, she showed potential for more interactive reading.

### *An Uncommon Sample of a First Language Illiterate's Reading*

Sabah's potential for more interactive reading and greater concern for maintaining sense was hinted at in her reading of the first two selections. In the third selection, *The Magic Pot*, Sabah realized this potential to a much greater extent. This reading was like no other reading I heard her do in two years' time. To clarify the differences in this reading, I will contrast three critical areas with her two previous readings. I will also look for similarities in all readings.

Sabah: Critical Miscue Percentage Categories over Three Stories

| | *Onion* | *Pigs* | *Magic Pot* |
|---|---|---|---|
| non-words | -0- | -0- | -0- |
| omissions | 57% | 64% | 14% |
| corrections | -0- | 13% | 49% |

The clearest difference in the three readings was in the category of omission. In the first two stories, Sabah's main strategy was omission. But in the third story, the percentage of omissions to total miscues was one-fourth what it was in the other stories.

Looking more closely at the few omissions, a consistency appeared. When Sabah did omit in the third selection, 90% of the resulting sentences were semantically unacceptable, and none of the omissions were corrected. So while omission was no longer Sabah's main strategy in the third story, when she did omit, she did not correct. This was consistent with her earlier readings where none of the omissions were corrected.

The syntactic and semantic acceptability in the third story were not skewed by high omission scores. What was revealed was a syntactic acceptability percentage (65%) comparable to the upper range of native English speakers' scores and a semantic acceptability score of 27%. According to Rigg (1977), there is usually about a 20 point difference between these scores for both native and second language students, so the spread of Sabah's scores was wide. Still, both the syntactic acceptability and the semantic acceptability scores were about double her earlier percentages. (This was an unusual change in the reading of the same person, which leads to speculation about the extent to which Sabah's omissions in the first two stories were similar to silent non-words. Certainly non-words were rarely corrected, and they often maintained high syntactic, but not semantic, acceptability.)

The greatest change occurred in the area of correction. Sabah moved from correcting no miscues in the first story to correcting 13% in the second story and to correcting 47% in the third story. This was a peak grade in correction. As mentioned earlier in this article, the native English speakers at the fourth grade level corrected an average of 30% of their miscues. Sabah's correction percentage was so high here (47%), and represented such a change in strategy, that it warranted closer inspection.

Corrections can be examined in several ways. What percent of the original miscues that were corrected were unacceptable? What percent were acceptable only with prior sentence content? What percent were totally acceptable even before correction? The first two of these categories would show a concern for meaning; the last would show an overconcern for textual accuracy at the expense of efficient reading. The following data resulted from a closer examination of Sabah's corrections on the third story with comparisons of native English readers as a group (K. Goodman and Burke, 1973:81), and with Fadwa's data for the same selection.

Correction Data--*Magic Pot* and Detroit Comparison

| % Corrected | Sabah | Detroit 4th | Fadwa |
|---|---|---|---|
| Syntactically unacceptable | 57 | 39 | NS* |
| Semantically unacceptable | 45 | 28 | 33 |
| Syntactically acceptable with prior | 97 | 49 | 50 |
| Semantically acceptable with prior | 80 | 46 | 50 |
| Fully syntactically acceptable | 39 | 21 | 18 |
| Fully semantically acceptable | 50 | 21 | 0 |

*Not significant

Sabah corrected a higher percentage of her miscues in all categories than either the Detroit native English-speaking fourth graders or Fadwa. In fact, Fadwa's percentages appeared similar to those of the native English speakers' for this reading selection, except that she didn't correct miscues that were totally acceptable. Here she appeared to be an efficient reader.

All Sabah's percentages here were higher than similar category percentages in the first two reading selections. Still, she did show consistency with the earlier readings in that the highest percent corrected was that of miscues syntactically acceptable with prior sentence content. This was the main trigger of her corrections in the first two studies, where she corrected over 50% of the miscues. As before, the percentage was higher than for any other category, but here it was almost 100%.

Despite the much greater interaction with the story and meaning that the corrections generally represent, the high percentage of already semantically acceptable miscues that were also corrected generates concern. To maintain meaning in the story, none of these needed to be corrected. As shown by the Detroit fourth graders' data, other readers corrected unnecessarily, but nowhere to the extent that Sabah did. It appears that Sabah moved from not correcting anything to overcorrecting. Concern for graphic accuracy could be part of the reason for this high overcorrection rate (4.7 graphic proximity, which is not an excessive rate).

A measure of quality in reading can be related to a combination of the percentage of miscues that were unacceptable but corrected plus the percentage of miscues that were semantically acceptable. Sabah had a comprehending score of 72 for this story, which was five times higher than the comprehending score on the first story and over double that on the second. This was generally a high score and was in line with her retelling (which is unusual).

Sabah's retelling of the third story included the basic events, characters, and plot of the story. But for the first time she went beyond what was stated in the story. Usually when asked to speculate why a character did something, or why an event occurred, "I don't know" was her first and final response. But when asked questions in the retelling of *The Magic Pot*, she answered willingly and even seemed to anticipate my questions. When asked why she thought the pot wouldn't stop making porridge when the mother asked it to, she first said what was implied in the story--that the mother didn't say the complete phrase for stopping the porridge-making. But Sabah then added, "it didn't stop because the fairy didn't give it to the mother, she gave it to the girl." I know of no way to quantify this. In two years of seeing Sabah regularly, the creativeness of this response was unique.

I also cannot account definitively for the change in relative frequency of different reading strategies between the third selection and the other two. The third selection was twice the length of the other two, but Sabah's strategies did not develop with the context of the third selection. Rather it seemed as if from the beginning she approached the third selection differently. To illustrate, in the first two stories, Sabah began omitting in the first paragraph and continued this strategy throughout. In *The Magic Pot*, however, she did not begin with omissions. Some of the change may have been due to a difference in pictures. The pictures in the third story were less frequent and fuzzier than in the other stories. Thus, Sabah had to depend more on language for her predictions. I do not feel that the stories were culturally dissimilar enough to contribute to such a change in relative strategies. The third story was about a girl, which appealed to Sabah. But again, I do not think that this is a main reason for her change. A last factor which may have contributed significantly to her reading was that of choice. Sabah chose the third story herself from an area of the room where I kept older books. Within the context of knowing that I wanted her to read to me, she chose the time and the book. I chose the other stories and determined the time. The semi-voluntariness surrounding the third reading situation may have been a decisive factor.

Whatever the reasons, with the third reading selection, Sabah gave a complete and somewhat creative retelling. Her major strategy was correction rather than omission. She was able to express her strength in control of English syntax and semantics through her reading. This represented a change from her earlier readings, a change in direction toward a higher quality of reading as defined by the comprehending percentage. The one negative quality expressed was overcorrecting--correcting what was already totally acceptable. It is as if when Sabah was able to forgo the excessive use of omission, many positive strategies came forth, but with them unnecessary correction came too.

## CONCLUSIONS

In this study, I examined the second language reading strategies of two first language illiterate 12-year-olds and compared them to the second language reading strategies of a first language literate student of similar background, as well as with data of reading strategies of other first language readers. Due to the small sample of first language illiterate students, this study was necessarily a descriptive case study, but the results do suggest areas for thought and further research.

An unusual feature of the first language illiterate students' second language reading is the total absence of non-words. Most second language readers produce a high percentage of non-words. Non-words are also a common feature produced by people reading their first language.

Another feature of the first language illiterate students' reading was their use of strategies that disrupted syntax. Most second language learners pick up the general syntax of English quickly, and their reading in English reflects this. Also, many first language readers maintain the syntax even when they have lost the meaning. But the omitting of one first language illiterate student and the calling of words with only a common first letter by the other first language illiterate student did not allow maintenance of syntax to an average degree. Here the strategies were not unusual, but just poor ones for retaining meaning.

The first language illiterate students' second language reading, according to these features, was more like that of low proficiency second grade native

English readers than that of other second language learners.

Unlike native English speaking second graders, the first language illiterate students had been in American schools for over four years. An important concern, therefore, is the delay in getting them to a basic level of reading. Other second language learners surpassed them in reading within a year of their introduction to English. The unproductive strategies of excessive omitting and calling words with only a letter in common with the text, if persistent enough, could stall progress in reading. But we need to know the first language illiterate students' reaction and progress from the beginning of their encounter with reading to explain the delay. Still, it is possible to speculate on the causes of their general reading strategies.

In general Sabah omitted frequently, never produced non-words, and gave short, minimal fact retellings. All these tend to point to a fear of making a mistake. In the third selection she overcorrected. This could show an overconcern with text accuracy, which is analogous to fear of making a mistake, as well as a misunderstanding of the purpose of reading. Husein's substitution of words that had no precedent in the story, some syntactic continuum, and the single first letter in common could reflect the instructional dictum "sound it out" (unaccompanied by concern for meaning), since there is no natural language process that could otherwise account for this. Husein also refused to read the story without pictures. During his reading, I watched his eyes travel to the picture, back to the text, and then "read" a word from what was going on in the picture. Unfortunately, pictures have multiple meanings, and what Husein focused on in the picture often had little to do with the text. He appeared to trust his reading of the pictures over any other reading. The fear of making a mistake, an overtrust in reading pictures--were these insecurities related to the students' first language illiteracy? A larger sample is needed, but still it is possible to consider social, linguistic, and methodological factors.

As described at the beginning of this study, the social setting of the American classroom is a tight world of its own, where immigrant students feel strong pressures to fit in. Sabah and Husein would certainly have had difficulty meeting academic expectations in this world, and it is my conjecture that their delayed and existing reading strategies were partly the result of too much pressure to do what the other students were doing, coupled with too little understanding of a purpose in reading beyond teacher pleasure and conformity.

Psycholinguistic factors also probably influenced the first language illiterate students' reading. Because they already spoke a language, the concept of speaking another language had a ready parallel. But reading had no such psycholinguistic analogy. When they came to American schools, Sabah and Husein must have had some idea of reading because it can be presumed that some of the people they came in contact with in their former society could read. But as reading had never been required of them, its purpose might have been vague. Reading would have been defined for them according to the half understood written tasks they were given to do in school.

Here methodological factors enter in. Husein's strategy of substituting a word beginning with the same letter as the printed word had suggests some phonics instruction. Sabah's omissions actually may indicate that she was simply waiting for a teacher to fill in the blank. Teachers sometimes feel that it is their duty to correct each miscue as soon as it occurs, so reading becomes a correction duel instead of a search for meaning. This zeal is especially strong with regard to second language learners, and it leads to student dependency on the teacher and fear of error.

These methodological confusions, ignorance of reading as a language form, and social pressures are not reserved for the first language illiterate students. Native English speakers are affected by them as well, but the effect on first language illiterate students seems more acute.

To establish clear links between social, psycholinguistic, and methodological influence on first language illiterate students' reading, which would lead to a better understanding of the effect of first language illiteracy, a longitudinal study of more first language illiterate students needs to be conducted. A potentially valuable study would be one that would focus on the strategies of second language readers who do *not* produce significant numbers of non-words, with the attempt to determine why non-words were not produced.

# Factors Which Enable Deaf Readers to Get Meaning from Print

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For profoundly deaf people reading can open the door to all the knowledge and experiences that are denied to them in other ways. It is sometimes their only means for keeping in touch with events (captioned news), culture (literature), and the everyday concerns of their own lives (telecommunications). Yet educators and researchers have repeatedly stated that there is a lack of reading proficiency among the deaf (Hart, 1962; Streng, 1965; Furth, 1966; Moores, 1970; Gibson and Levin, 1975). These statements are, however, based on standardized test scores, which are suspect for any population, especially the deaf (Brill, 1971), and which provide no information about the way the deaf process written English.

This article, which is based on descriptive studies of the reading of deaf children, will attempt to demonstrate that deaf readers are capable of getting meaning from print and that any limitations they may have in terms of reading proficiency are not the direct result of deafness. Along the way, the following points related to this theory will be presented and discussed:

- Deaf and hearing readers process print in essentially the same way.
- The factors which make it possible for a deaf reader to achieve proficiency are the same as those which allow reading proficiency to develop for any reader. Any limitations with regard to these factors could, by the same token, result in problems for any reader.
- One crucial factor in reading is language--an understanding of how language is used and what it is used for. Another factor is experience and the extent to which new experiences can be related to existing cognitive structures. Finally, we need to consider the strategies used by a given reader and the redundancy of the language being read.

The argument that the reading process is the same for the deaf and the hearing is based, in part, on the theory that there are universals of language (Greenberg, 1963), universals of language learning (Slobin, 1976; Fillion et al., 1976), and universals in reading (K. Goodman, 1970b).

There is evidence that deaf children's natural acquisition of sign language closely parallels the acquisition of oral language by hearing children. There are similarities in time of onset, stages of acquisition, amount of language produced at each stage, the acquisition of the shapes of the language (comparable to the sounds of oral language), and the acquisition of meaning (Schlesinger and Meadow, 1972; Bellugi and Klima, 1978). In addition, there is evidence (Ewoldt, 1978) that deaf and hearing children exhibit the same reading behaviors. (For detailed information about these behaviors with regard to hearing monolingual readers, see K. Goodman and Burke, 1973.) One example is that both deaf and hearing readers make omissions, insertions, and substitutions, as in the following excerpt from a deaf child's reading of a story ("Bus Ride." From *All in a Row*. Reading Unlimited, Level 2. Glenview, Ill.: Scott Foresman, 1976).

Text: Then the bus went fast.
Reader: The bus is go away.

This reader is 6.11 years old. She has a profound hearing loss of 100 dB in the better ear, was born deaf, and has no residual hearing in the speech frequencies. All the readers described in this paper have the same characteristics. The only variable is age (with two exceptions, which will be noted with the example). These criteria were chosen so that oral language input would not be a variable.

Another example of similar reading behavior is that both deaf and hearing readers attend more closely to the print when the material they are attempting to read is too difficult. Three deaf children were given two stories each. They were videotaped as they signed and retold the stories. One of the stories was at approximately their ability level or somewhat lower; the other was much more difficult in terms of concept load. Table 1 presents the results of an analysis made of their reading.

TABLE 1

Comparison of Easy and Difficult Stories

| | Jane | | Lisa | | Amy | |
|---|---|---|---|---|---|---|
| | Easy | Diff. | Easy | Diff. | Easy | Diff. |
| % Syntactically Acceptable Sentences | 91 | 89 | 77 | 63 | 97 | 41 |
| % Semantically Acceptable Sentences | 75 | 59 | 60 | 42 | 93 | 29 |
| Fingerspelled Words per Hundred Words | 4.00 | 10.51 | 12.52 | 14.26 | 2.42 | 5.95 |
| Non-Divergent Miscues per Hundred Words | 11.11 | 8.94 | 13.17 | 7.80 | 36.97 | 28.57 |
| Siglish Signs per Hundred Words | 15.31 | 24.28 | 10.56 | 12.30 | 30.30 | 17.00 |
| Divergent Language Influence per Hundred Words | 67.28 | 54.47 | 63.46 | 55.61 | 58.00 | 36.19 |

Ages of Subjects: Jane=15.11; Lisa=16.11; Amy=6.11

Each of the readers produced smaller percentages of grammatical (syntactic) and meaningful (semantic) sentences in the more difficult story, as would be expected. What is most interesting is that they also seemed to attend more to the print in the second story. For example, fingerspelling (representing the English letters one at a time) increased for all the readers, and the numbers of miscues (unexpected responses to the print) decreased. While a decrease in number of miscues may seem a desirable outcome, it is the quality and not the quantity of miscues which indicates reading proficiency. Therefore, a decrease in miscues accompanied by a decrease in syntactic and semantic acceptability is evidence of less effective reading. "We have moved from preoccupation with frequency-of-deviation to effectiveness of reading" (K. Goodman and Burke, 1973).

The number of signs produced without English inflections (divergent language influence) decreased, and the number of signs with such inflections (Siglish) increased for the two older readers. The decrease in the use of Siglish signs by the youngest reader is the result of the larger number of omissions in the second story. Words which might have been inflected were omitted.

Using evidence such as the above, the author has proposed a model of the reading process for the deaf (Ewoldt, 1977). This model closely follows that proposed by Kenneth Goodman (1976) for hearing readers. Its basic elements are predicting, sampling, confirming, and comprehending. According to the model, readers make predictions on the basis of their prior knowledge and their own language systems, they sample from the print to make or confirm these predictions, they process the information in chunks larger than single words, and they either assimilate the information into existing schema or accommodate to the new information by changing such schema. Much the same process has been described by Smith (1975) and Huey (1908).

While the basic elements of Goodman's model apply to any reader, the deaf reader does exhibit some differences. One of these is that profoundly and prelingually deaf people with no residual hearing in the speech frequencies must make use of graphic rather than graphophonic cues as a hearing reader would. However, there are two other language cuing systems--the syntactic and semantic--available to all readers. They are used to a greater extent by proficient hearing readers than graphophonic cues (K. Goodman and Burke, 1973).

In Kolers' (1966) study of the reading of French and English bilinguals, the readers produced both substitutions which changed the pronunciation of the expected response to the pronunciation used in the other language and substitutions which were in a different language from the expected response. This study prompted Kolers to assert that "reading is only incidentally visual."

The reading of two deaf children suggests that the same may be true for deaf readers. Figure 1 presents the mean percentages of miscues taken from two stories read by each child. One is a proficient reader who is 16 years old; the other, a non-proficient reader who is 12.8 years old. Their proficiency was determined by teacher judgment, retelling scores, and reading performance. The major difference between the profiles of the two readers is in the relative use of semantic and graphic cues. The following is an example of a semantically acceptable but graphically dissimilar miscue produced by the proficient reader. (Taken from "My Brother is a Genius." In *Adventures Now and Then*. Betts Basic Reader, Level 6. New York: American Book Company, 1965:246-256.)

Text: But he was rushing around giving orders to lighting crews and cameramen.

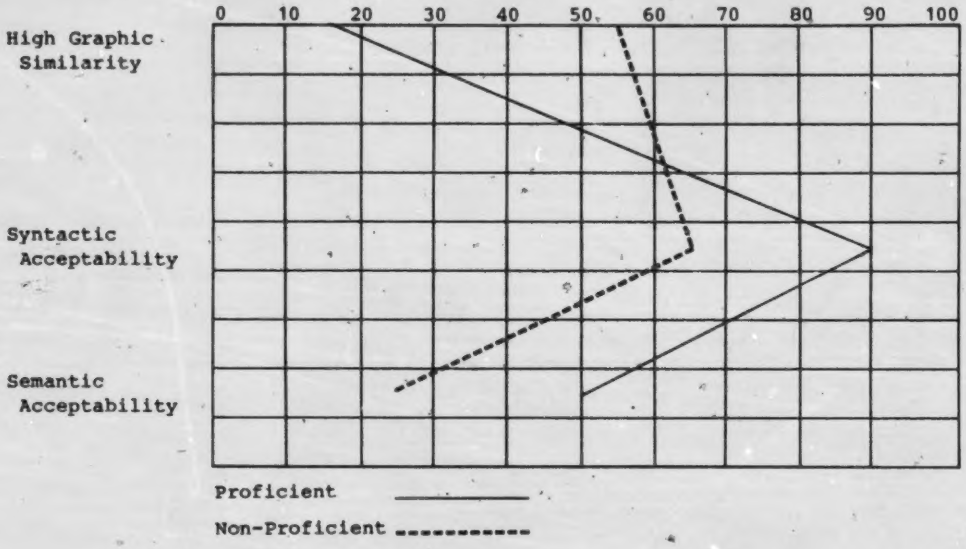
Reader: But he was rush around, give order to light man and cameraman.

Note that syntactic acceptability here does not mean syntactically acceptable only in English. As will be discussed below, deaf readers use a variety of communication systems, and miscues which would be acceptable in either English or one of the sign systems were coded as acceptable.

The problem reader is one who exhibits ineffective strategies most of the time. Miscues such as building for Billy and library for Lucy produced by a deaf reader (age 12.8) in one story are examples of graphic similarity with no meaning. This strategy is used consistently by readers who have been "taught" one word at a time and whose attention has been focused only on graphic information.

FIGURE 1

Comparison of Proficient and Non-Proficient Deaf Readers



One additional difference between Goodman's model and the reading of the deaf may also be true of any hearing ESL learner who is processing English print. That is, the non-native processor of English, whether hearing or deaf, does not seem to be tied to the syntax of English in the way that native speakers are. For the native English speaker the structure and the meaning of the language are almost inseparable, but there is more flexibility in the way a deaf reader can get to meaning without having to go through conventional English forms. This possibility was suggested by Romatowski (1972) when she noted that Polish readers' substitutions of non-inflected English words did not deter them from getting meaning from the passage. Such substitutions and other differences related to the sign systems of deaf readers occur frequently. The following is an excerpt from the reading of a story by a deaf girl age 15.11. (Taken from B. Friis-Baastad, "Leave Him Alone." In *Milestones to Excellence*. Reading Systems, Level 8.3. Glenview, Ill.: Scott Foresman, 1975:60-63.)

| | |
|---|---|
| Text: | The two young ladies--no, big girls--who'd boarded the streetcar just before him, sat opposite, eating plums out of a yellow paper bag. They nudged each other and giggled. Girls like that really get me down. |
| Reader: | The two young lady--no, big girl--what had boarded (fingerspelled) the street car (fingerspelled) just before him (fingerspelled) sit opposite, eat (stuffing motion) plums (fingerspelled) out (fingerspelled) of (fingerspelled) a yellow paper bag (fingerspelled). They eat (continuous motion) giggle and giggle. Girl like that true get me down (meaningful facial expression). |

Excerpts from retelling: Two girl go in train (mimes tromping on board).... Two girl laugh, eat plums (fingerspelled) eat. See, laugh, boy bring Teddy.... Eat, eat, eat.

Note that the above transcription is a gloss, an English word matched with each sign. This is given to show that the systems being used are varied. An interpretation would include considerations of facial expressions, emphasis, and use of space and movement. There is no generally accepted way of writing Sign, and it does not do justice to any language to write its closest equivalents in another language. As can be seen from the above gloss, however, deaf readers have a wider range of options for representing English print. They can use fingerspelling, pantomime (expressing ideas concretely through the use of non-sign gestures and body movement), and a variety of sign systems. One such sign system is American Sign Language (ASL), which is the natural language of the deaf community. The influence of ASL may be one reason for the substitutions of non-inflected forms above and, possibly, in the use of the *true* sign for *really*, although many non-ASL speakers also use that sign.

The above excerpt also has elements of other sign systems which, for the purpose of simplification, will be called by the generic term Siglish. These are invented sign systems which use English order and English inflections. Examples can be seen in the reader's signing of *they* and *a*. Woodward (1973) describes these systems on a continuum, with ASL approximately at one end and the Siglish systems at the other. As shown above, most deaf signers can be found somewhere in between.

Since the process of reading is believed to be essentially the same for both hearing and deaf, it is also believed that the same factors which enable a hearing child to become a proficient reader are available to the deaf child and that the degree of reading proficiency achieved by any child is related to the extent to which these factors are realized.

One of these enabling factors is a sufficient language base. Although it is still believed by some that this base must be oral English, many educators and researchers are now convinced that this solid base can be any language (Conrad, 1976). The fortunate deaf child who has other deaf relatives in the home or whose hearing parents recognize the importance of signing with their child, and who had the advantage of learning a form of manual communication naturally, comes to school with a solid language base to apply to the learning of reading. Indeed, studies have shown that deaf children of deaf parents do better on tests of reading than deaf children of hearing parents who do not use manual communication (Meadow, 1968; Vernon and Koh, 1971). Unfortunately, many deaf children do not come from homes where manual communication is used. Many have hearing parents who communicate minimally with them in any language. And those who must rely solely on oral language often do not develop the solid language base they need, the lack of which will be a deterrent to reading for them.

While the importance of language in reading for the deaf has long been recognized, concern has been directed primarily at the structure of English and analysis of transformations which present obstacles for deaf people (Russell et al., 1976). Such concern is valid, to a degree; however, studies of the deaf person's linguistic competence in English are usually not conducted within a framework of natural language in a meaningful context. As discussed earlier, deaf readers sometimes seem able to get to meaning without going through conventional English forms if they are processing the language of a whole story.

There is a natural redundancy of language available to readers of a whole story which can enable them to grasp the important ideas even though they may not be familiar with a particular sentence structure. Cues to the important information in a story are given more than once. For example, in the preceding sentence there are two syntactic cues for the plurality of the word *cues*--the *s* ending on *cues* and the word *are*. In addition, there is semantic information in the phrase "more than once" which helps to convey the plurality concept. In a whole article about the cue systems, even more information would be provided, not only for a concept like plurality but for many more important concepts such as the meaning of words and ideas.

More basic understandings than the structural components of language must be gained by a child. The child must understand the functions that language can serve (Halliday, 1973). This understanding probably precedes, or at least coincides with, learning language forms for the hearing child or the deaf child whose parents use Sign. Such a child will experience language being used in meaningful contexts for specific purposes and will begin to use the language in the same way. Deaf children who must depend upon the school environment for language learning may perceive language as having only regulatory or informative functions. At the same time they may be involved in language instruction which is artificial and structured according to some supposed hierarchy of syntactic complexity. The ludic quality of the language--the language play that gentle bantering, songs, and nursery rhymes provide for the hearing child or the child of signing parents (Schlesinger and Meadow, 1972)--is often missing altogether. Also missing is the opportunity to experiment with the constraints of the language, as "mistakes" are usually devalued from the first day of school, and creativity is often viewed as deviation.

One striking example of a misconception of the functions of language can be found in a videotaped conversation of two boys who had read different stories and who were telling each other about their stories. Although the boys understood that neither had read the other's story, they asked each other questions about events that the other did not know, as in the following excerpts from the interpretations of their conversation:

Randy: Tell that story? There was a race--oh, no--The title was "One, Two, Three, Go." Who won the race? Which--a boy or a girl?
Harold: A boy.
Randy: Right.

---

Randy: One, two, three go. Who won?
Harold: Who won? The boy.
Randy: Who won? What's his name?
Harold: Oh, I know who.
Randy: Ken or the boy--which?
Harold: The boy.
Randy: No, Ken.

---

Harold: ..."We can buy paint for the old house. It's not a pretty house." Do you know what color the paint was?
Randy: Brown.
Harold: No, red.

---

Harold: The man went inside. The old woman said he was not finished inside. "You forgot. Go buy two colors of paint." (To Randy: What colors?)
Randy: White and red.
Harold: Wrong. Yellow and blue.

The boys seemed to be demonstrating their perceptions of the function of questions--to ask something the other could not possibly know. Their attempts to answer the questions demonstrate a "game-playing" strategy which is probably prevalent in schools for the deaf and which casts serious doubts on the validity of using questioning as a measure of comprehension.

These two boys, age 12.2 and 13.1, are the exceptions to the criteria used to choose examples for this paper. The hearing loss of one is moderate, that of the other, severe; unlike the other readers, they do not have a profound hearing loss. In addition, one became deaf at about one year of age; the time of onset of deafness for the other was not known by the parent.

When asked, "Why did the author write this story," both deaf and hearing children tend to say, "To teach us words," or some similar statement that reflects the perception of reading as having only an instructional function. Because some deaf children may have a limited understanding of what language in general is supposed to do, they may have an even more limited view of the functions of reading than a hearing child would. The deaf person who does not choose reading as a leisure activity, who rejects fanciful literature, who does not perceive a passage as being humorous or sad, may be reflecting a limited view of the functions of reading.

The following is an interpreted excerpt from the retelling of a tall tale about Pecos Bill's bride, who started bouncing on her bustle and went all the way to the moon and was never seen again ("How Pecos Bill Won and Lost His Bouncing Bride." *Passports*. Reading Unlimited, Level 16. Glenview, Ill.: Scott Foresman, 1976:107-109.). The reader is 16.11 years old.

Researcher: Not a true story? Which--true or not true?
Reader: I think it's not true.
Researcher: Why do you think that?
Reader: I think maybe it's an invented story.
Researcher: What was not true in the story?
Reader: Because it was about the moon. You can't go to the moon. That's crazy. (Disgusted look)

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Researcher: Was it funny, or sad, or what?
Reader: I think it was sad.
Researcher: Why?
Reader: I don't know. Funny.
Researcher: Why do you think it was funny?
Reader: I don't know, really.

If a knowledge of language and its functions is essential for reading, a broad experiential base is crucial. (In the above example, a lack of experience with tall tales was probably an additional factor.) This experiential base is an advantage that the deaf child of deaf parents is more likely to have. Parents who are deaf themselves will not be embarrassed for their deaf children and will be more likely to take them places and involve them in the deaf community. The child and the parents will have a common language for expanding and exploring those experiences. Within the deaf community such a child will also be able to use the hearing child's strategy of picking up incidental information from "overheard" adult conversation. A deaf child of hearing parents who sign and who associate with other signing people should have a similar advantage.

Even with this advantage, however, the deaf child is not likely to have access to as many possibilities for experiential input as a hearing child would have. The vicarious experiences of radio and television, for example, are often denied to the deaf person. All other things being equal, it is probably their experiential limitation and not a limitation of the children themselves that is reflected in the lack of proficiency of some deaf readers.

Deaf readers, like any readers, make use of the experiences they have had, and like any readers, are successful when they are able to make associations between these experiences and the information in the passage. The unsuccessful matches are good evidence for this fact.

In the retelling of "Leave Him Alone" one deaf reader (age 15.11) who was highly proficient in retelling other stories said that the story was about a teddy bear, when in actuality it was the story of a mentally retarded boy named Teddy. In the excerpt which was read, Teddy's brother is embarrassed when he and Teddy get on a bus and two girls make fun of Teddy. The misconception about the teddy bear would appear to reflect an appalling lack of understanding, but an examination of the information about Teddy which the story provided seems to support a different view. Because of the story's length and time constraints on the day of taping, the researcher unwisely took out what were thought to be unnecessary parts of the story. The following sentences, found at different points in the story, are the only references left as to the identity of Teddy.

(1) "Teddy refused to wait but padded along with two girls and dumped himself on the seat just inside the door."
(2) "And Teddy wouldn't mind if they laughed at him."
(3) "Nobody was going to laugh at my brother."
(4) "Teddy was singing and waking everyone up. He sat on his hand, rocking with delight."
(5) "Maybe other people think it doesn't matter if they laugh at sick boys."
(6) "Should I feel ashamed of Teddy? Sometimes I've had the feeling that Mother and Father are. But that's nonsense--they love Teddy."
(7) "Teddy's head is useless for thinking. One, or perhaps more, of the machine parts is missing."
(8) "Nobody had ever told me what was really wrong with Teddy."
(9) "I dragged Teddy out of his seat quickly, and we tumbled out of the streetcar as soon as it stopped."

This reader apparently assimilated the information in the story into an existing category for Teddy, which had only been experienced as the name of a bear. Sentences 2, 6, 7, 8, and 9 present no information that would necessitate accommodation. Sentence 3 could have been interpreted metaphorically. In Sentence 5 the referent could have been interpreted as the older brother instead of Teddy. Sentence 4 makes sense if related to the idea of a mechanical toy--an idea which could have been supported by Sentence 7. This relationship suggests that at or prior to Sentence 4, the reader predicted that Teddy was a mechanical bear, and this prediction was confirmed by Sentence 7. That leaves Sentence 1 as the only cue to Teddy's being human that might not have fit with the existing category. Because it occured so early in the story (the third sentence), there was no prior semantic build-up, and the influence of prior experiences is strong (Anderson 1977), this information was either disregarded or reinterpreted, and the following references to Teddy were not sufficient to disconfirm the prediction that Teddy was a bear.

Some stories do contain sufficient redundancy to allow a reader to disconfirm original predictions. For example, the following two excerpts are from "My Brother Is a Genius." The word genius is, obviously, an important concept in this story.

(1) You don't have to be a genius to win the prize, just smart enough to plan something really interesting and original.
(2) I leaned over the crib, pointed a finger at him and said, "Say 'da'." Clearly and distinctly Andrew said, "Philosophical." At first I just looked at him. "Philosophical?" I asked. "Did you say 'philosophical'?" "Communication," he said, also clearly and distinctly. "Mother! Dad!" I yelled. "Andrew isn't typical! He's — he's a genius!"

The same reader who mistook Teddy for a bear read this story. She fingerspelled genius in the first encounter (excerpt #1), but signed smart the second time it appeared (excerpt #2). Following the reading of the whole story, she retold it as follows:

The older brother studied and read a book. The baby listened to him read and said, "Philosophical." The baby calmed down from the brother's speech. He listened and understood. It was a surprise. The baby got smart. (Interpretation)

Obviously, the concept of genius was made clear to this reader through the author's use of redundancy.

A deaf boy (age 13) who had been described as a poor reader encountered the name Don in a story six times. Each time, the word appeared at the beginning of the sentence, so the fact that it was capitalized did not signal to the reader that this was a name. On the first encounter he asked for help with the word. He was advised to make a guess. He signed the word do for Don and continued reading. Do was substituted for Don two more times, but on the fourth encounter with the word, the boy broke into a grin and gave the name sign for Don, then fingerspelled it, gave the name sign again, and fingerspelled it again. On the last two encounters he confidently used the name sign.

This is not a rare occurrence. This author has seen similar things happen with many deaf readers, of varying proficiency and degrees of hearing loss. Given the experience and the opportunity, deaf readers can make use of redundancy to deal with print on their own.

In summary, through examples of descriptive studies of the reading of deaf children, the author has attempted to show that deaf readers can get meaning from print, that the major factors which enable this to happen are the reader's perceptions of the functions of language and reading, the experiential base of the reader, the strategies the reader has developed, and the redundancy of natural, whole language. Implications for facilitating reading can thus be seen clearly. The teacher should help the child to perceive the communicative functions of language and reading by making language and reading meaningful. A structured, drills approach can result in false perceptions about what reading is supposed to do for the child and in ineffective strategies for dealing with print.

The teacher should see that the child has as many experiences as possible --both vicarious and concrete--and should give the child many opportunities to make the most of those experiences by communicating about them and expressing feelings about them in language, art, music, dance--in every way possible to ensure that categories for these experiences are developed. The teacher should also make sure that children have many opportunities to read whole, naturally-written stories without interruption and without fear that their understanding of every detail in the story will be subject to questioning.

Deaf children are, like any children, human beings with functioning minds. If we trust that they can get meaning from print and give them the environment in which to read, they will.

# A Miscue Analysis of German Speakers Reading in German and English

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## INTRODUCTION

This article represents the findings of a more comprehensive study[1] which was undertaken to examine, by means of miscue analysis, the second-language reading proficiency of native speakers of German, reading both in English and in German. Two sets of data--miscues in English and in German--were analyzed and compared to delineate similarities and differences in the subjects' ability to process written versions of their native and second languages. The purpose of the study was, therefore, threefold:

- To determine how closely a German speaker approximates the task of reading in English to that of reading in his native language by describing the oral reading miscues in each language quantitatively and qualitatively.
- To assess the proficiency of the subject's reading for comprehension in both English and his native German by means of an oral retelling in each language of what had been read previously.
- To draw conclusions on the pedagogical implications of teaching reading in English to second-language speakers, making use of Y. Goodman and Burke's *Reading Miscue Inventory* (*RMI*) as a diagnostic tool.

## METHODOLOGY

Seven German students between the ages of 18 and 21 were selected to participate in the study. All subjects came from the vicinity of Westphalen and Hessen in the central part of West Germany, and had completed from 7 to 11 years of schooling in the Gymnasium. The average length of formal English training received by the subjects while in the Gymnasium was eight years. Selection was based on several criteria, the most important of which was that each student had been in the United States for only four weeks (as a part of an American/German student summer exchange for language study at Hope College in Holland, Michigan). This insured that the subjects were not any more influenced in their reading or oral discourse by acculturation to this country than most foreigners found in the average ESL classroom at the beginning of their English studies in the U.S. Also, the subjects were screened to determine that they were not bilingual, i.e. that English was not used alternately with German in their home environments.

The selection of two English and two German short stories for the study was made on the basis of length and approximate difficulty.[2] Each participant was asked to read and retell one story in each language for the investigator.[3] A marking system was adopted which resembled the *RMI* short form. Each of nine categories on the *RMI* coding sheet refers directly back to the phonological, syntactic, and semantic processing done by the reader.

The categorical breakdown of language cueing systems--phonological, semantic, and syntactic--on the *RMI* coding sheet allowed the investigator to analyze individual oral miscues, which in turn indicated the manner in which the reader used the necessary strategies of scanning, fixing, selecting, predicting, testing, regressing, and confirming (K. Goodman and Niles, 1970) to acquire meaning. To adapt to the unique situation of having a foreign language speaker reading in English as well as in his own language, the *RMI* marking system was altered where necessary. This was particularly important for the categories of "Dialect" and "Sound Similarity," and will be elaborated on in the category findings.

While miscue analysis recognizes the need to evaluate the genesis and significance of deviations from the written text, the simple enumeration of miscues must come first. From this information important statistics can be gathered, including the number of miscues generated per hundred words (MPHW), and the number of miscues generated per half of the given story (MP½S). While the MPHW figure is an average, the MP½S figure is an absolute count to determine to what extent miscues increased or decreased as the reader progressed through the text.

## GENERAL FINDINGS

As can be seen in Table 1, the number of miscues per hundred words varies from 1.0 to 5.5 in German and from 3.5 to 9.1 in English. The average number of miscues per hundred words, by language, was 3.2 and 6.5 respectively. Thus, a fraction more than twice as many miscues were made on average by subjects when reading the second language as were made when reading the native language.

TABLE 1

Comparison of MPHW, Residual MPHW, Retelling, and Comprehension

| Subjects | MPHW | Residual MPHW | Retelling % | Comprehending % |
|---|---|---|---|---|
| | | German | | |
| 1 | 1.1 | 0.5 | 99.4 | 38.5 |
| 2 | 5.5 | 2.1 | 80.0 | 70.9 |
| 3 | 1.0 | 0.7 | 92.5 | 27.3 |
| 4 | 2.7 | 1.3 | 97.5 | 70.4 |
| 5 | 4.9 | 1.8 | 85.0 | 62.5 |
| 6 | 2.3 | 0.9 | 82.5 | 61.6 |
| 7 | 4.7 | 2.5 | 58.8 | 50.0 |
| Averages | 3.2 | 1.4 | 85.1 | 54.5 |
| | | English | | |
| 1 | 3.5 | 1.7 | 93.8 | 51.9 |
| 2 | 7.8 | 6.0 | 88.8 | 25.0 |
| 3 | 4.8 | 2.9 | 83.8 | 37.8 |
| 4 | 7.7 | 5.2 | 58.8 | 29.8 |
| 5 | 9.1 | 4.6 | 58.8 | 53.6 |
| 6 | 4.1 | 2.1 | 63.8 | 50.0 |
| 7 | 8.4 | 5.9 | 45.0 | 29.5 |
| Averages | 6.5 | 4.1 | 70.4 | 39.7 |

Table 2 reveals that, for both languages used, the average rate of miscues of all types combined increased from one half of the text to the other; however, the average amount of increase is more for German than for English.

TABLE 2

Miscues by Half Story for Each Language

| Subjects | German | | English | |
|---|---|---|---|---|
| | First Half | Second Half | First Half | Second Half |
| 1 | 10 | 6 | 18 | 11 |
| 2 | 26 | 39 | 29 | 36 |
| 3 | 4 | 8 | 21 | 19 |
| 4 | 15 | 23 | 26 | 29 |
| 5 | 22 | 36 | 33 | 43 |
| 6 | 11 | 16 | 20 | 14 |
| 7 | 26 | 30 | 33 | 37 |
| Total MP½S | 114 | 158 | 180 | 189 |
| Percent | 41.9% | 58.1% | 48.8% | 51.2% |

Because the MPHW and MP½S cannot supply qualitative information about the miscues made, different types of measurement must be used, one of which is the residual MPHW. To determine the residual MPHW, all miscues which were semantically acceptable (or were corrected to become semantically acceptable) are subtracted from a subject's total MPHW. The result is a figure reflecting the number of miscues which cause a loss of meaning; they would represent "low quality" miscues, i.e. those which do *not* help the reader gain meaning.

The second type of measurement used to analyze miscues qualitatively is the comprehending score, which focuses upon the subject's ability to provide for language patterns from which meaning can be elicited. Goodman and Burke determine the comprehending score by taking the first 50 non-dialect miscues of each subject and measuring the percentage of "high quality" miscues, i.e. those which are semantically acceptable, or corrected to become acceptable, even if the intended meaning of the author has changed. For the purposes of this study, the comprehending score is determined by using *all* non-dialect miscues made by the subject and finding the percentage of "high quality" miscues therein.

Table 1 illustrates the relationship of comprehending scores to MPHW, residual MPHW, and retelling scores. As has been noted, the averages of the MPHW percentages for both languages show that twice as many miscues are being made in English as in German. Even more importantly, the averages of residual MPHW percentages for both languages show that three times as many miscues are of a "low quality," i.e. semantically unacceptable in the context of the English story. While the average comprehending score in German is 54.5%, that in English is 39.7%, or approximately three-fourths of the German rate. Finally, the average German retelling score is 85.1% as compared with the average English retelling score of 70.4%, which is approximately four-fifths of the German rate.

The question that arises is this: how can such a large degree of comprehension be manifest in the German subjects' reading of English *despite* the number of miscues made--so many of which destroy the semantic intentions of the text? For answers one must look further into the data provided in the Inventory. The following section deals with a brief analysis of findings for each of the Inventory's nine categories.

## FINDINGS RELATED TO SPECIFIC *RMI* CATEGORIES

### *Dialect*

If oral reading miscues can be identified as a part of the consistent and rule-bound dialect of the speaker (even if multiple miscues are then triggered within a given utterance), the grammatical and semantic acceptability of the utterance need not be automatically questioned. Y. Goodman notes in the *RMI* manual that sound-level dialect variations (such as /pɪ́čər/ for "picture," /aydíər/ for "idea," or /wɪf/ for "with") generally are not even coded as miscues. However, in this study, because sound variations were the predominant difference found in a German subject's reading of English, all such deviations from standard English were initially marked and then surveyed to determine their relative importance.

In many cases, a distinction had to be made between phonological deviations from the text that merely represented an imposed German phonetic feature on an understood lexical item and a deviation that actually was no more than a partial "sounding-out" of an unknown lexical item. In the first case,[5] comprehension usually was not affected; such phonological miscues were normally restricted to a set of features we readily recognize as being part of a German "accent." Occurrences of this type of deviation were then marked "dialect," but were not included on the coding sheet because of their consistent use by all subjects and their full rate of grammatical acceptability with no change in meaning.

In the second case,[6] the pronunciation actually rendered the item a "nonsense word," and it had to be marked and coded accordingly. These items usually indicated semantic unacceptability and full meaning change, although inflection often verified that the function was not changed and that an allowance for syntactic acceptability had to be made. Items of this sort were not marked "dialect," as their pronunciation was idiosyncratic and highly unpredictable.

It became a difficult task to determine whether, in some cases, an item was a nonsense word, signalling a loss of meaning, or whether the reader recognized the item and understood its meaning in the context of the story but simply did not yet have full productive control over its pronunciation. After consultation with Y. Goodman, it was determined that an extra parameter ought to be established, providing for phonological deviations of this sort by non-native speakers. Marking this type of item[7] with a "PP" under "Semantic Acceptability" and "Meaning Change" meant that the degree of comprehension and correct usage could not be fully determined although the degree of graphic and sound similarity was high. As phonological approximations of this sort are a natural part of learning a second language, they must be accounted for, yet it should be understood that only the retelling can ultimately verify whether the items are comprehended within the context of the story.

German language features other than the noted phonological interference did not surface during the readings in English. There were few vocabulary variations, and none illustrated the example of cultural bias seen in the reading of a lexical item like headlights for headlamps as described by Y. Goodman and Burke (1972).

In summary, over three times as many dialect-attributed miscues were made in English as were made in German, although these were, for the most part, of phonological origin and represented the subjects' ever-increasing approximations of native English pronunciation. Syntactic and lexical miscueing, attributed to dialect, represented only .5% of the total number of German miscues and a negligible percentage of the total number of English miscues. This indicates that spoken dialectal forms were not only inhibited, but virtually suppressed, as the readers adhered very carefully to the written text in their reading. The notion of a formal "reading" register may account for this phenomenon.[8]

*Intonation*

Slightly more than five times as many intonational miscues were made in English (46 instances) as were made in German (9 instances), most of those having to do with misplaced stress in a polysyllabic word. While meaning change can be affected by an incorrectly placed stress marker (/ritortś/ in place of /rítorts/, for example), such a miscue was marked "PP" in the "Meaning Change" category. This indicated that the researcher could not evaluate whether a meaning change had occurred for the reader who was unfamiliar with appropriate pronunciation factors in English, but who may have syntactically and semantically comprehended what he was reading in the context of the story.

*Graphophonic Proximity*

Y. Goodman and Burke (1972) noted a tendency for a slightly higher graphic proximity to the expected oral response than a phonetic proximity among their 94 native English subjects from Detroit. Rigg (1974) completed a miscue analysis on nine subjects from two differing regions of the United States (Detroit, Michigan and Port Gibson, Mississippi) and found much the same thing.

This analysis of German subjects reading in English and their native language found, also, that in both languages, graphic proximity ranked higher than sound proximity (see Table 3). It should be noted that the graphic proximity is approximately 14% higher in English than it is in German; likewise the sound proximity is approximately 10% higher in English than in German.

TABLE 3

Graphic/Sound Proximity and Retention of Meaning

| Subjects | German | | | English | | |
|---|---|---|---|---|---|---|
| | Graphic-% | Sound-% | N/MCh*-% | Graphic-% | Sound-% | N/MCh*-% |
| 1 | 61.5 | 46.1 | 46.1 | 96.0 | 88.0 | 51.9 |
| 2 | 79.0 | 73.7 | 71.0 | 56.2 | 52.1 | 25.0 |
| 3 | 60.0 | 60.0 | 36.4 | 80.6 | 71.0 | 29.8 |
| 4 | 66.7 | 61.9 | 70.4 | 93.6 | 83.0 | 46.8 |
| 5 | 65.9 | 65.9 | 67.8 | 83.6 | 75.4 | 62.4 |
| 6 | 68.2 | 68.2 | 65.4 | 87.1 | 74.2 | 65.6 |
| 7 | 65.7 | 65.7 | 64.0 | 68.5 | 72.2 | 33.8 |
| Averages | 66.7 | 63.1 | 60.2 | 80.8 | 73.7 | 45.0 |

*No Meaning Change

Thus, while all subjects' observed responses (ORs) were closer to the expected response (ER) graphically than in sound (approximately 7% difference in English and 4% difference in German), there is a substantially greater reliance on the graphic features in English than in German. This fact is, in itself, not surprising. Because English is the second language and much of the vocabulary, if not the syntactic structure, is less familiar, one might have predicted that there would be greater attention to critical graphic features. But the degree of increased attention is significant. The greatest proficiency in reading comes as a result of the trade-off between graphophonic, syntactic, and semantic cues which allow, as a result of redundancy, the selection of only that minimal number of cues necessary for identification and comprehension. The substantially greater degree of graphic proximity in English may indicate an overreliance on this single cueing component at the expense of greater apprehension of meaning.

The only way to fully determine this is by looking closely at the category of "Meaning Change" for both languages, to assess how little or great the occurrence of meaning change was as a result of miscueing. The N/MCh column in Table 3 reflects the percentage of miscues that do not change the meaning of the sentence or the author's intent. The results range from 36.4% to 71% in German and from 25% to 65.5% in English for individual subjects. But the degree of "no change" in meaning averages 60.2% and 45% respectively for the two languages. Conversely, then, a partial or full loss of meaning is incurred in 39.8% of all German miscues and in 55% of all English miscues. The intended meaning of the author in the English readings is changed considerably more than it is in German, despite--or possibly because of--the conscious and consistent proximity to graphic features displayed by the readers in English.

One might wonder at the discrepancy between the average percentage of sound similarity in German as opposed to that in English, i.e. 14% greater in English than in German. This appears to contradict the widely held but untenable position that a closer phonetic correspondence to print, which German as a language has as compared with English, can be dealt with more easily and accurately by the reader. In fact, after comparing the degree of graphophonic proximity to the amount of retention of meaning in each language, it should be clear that graphic/sound relationships have little bearing on the process of reading for meaning. (The implications of this point will be discussed later.)

### *Grammatical Function*

The analysis shows that, for all miscues made, the majority of substituted words have the same grammatical function as that of the expected response. A full 83.2% of German miscues had an identical function as the textual item; 89.6% of English miscues followed the same pattern.

### *Correction*

The overall correction rates of oral miscues by individual and by language group are surprisingly different when compared with one another. In German, the individual rates of correction range from 8.3% to 73.7% of all oral miscues made, whereas in English, the range is much smaller--from 19.7% to 44.1%. The average percentage of correction is 42.6% in German, which compares with only 26.5% in English.

The much higher rate of correction in German as opposed to English could be accounted for by recalling that most German and English language miscues involve contentives, for which there may be a considerable lack of familiarity in the second language. Indeed, the residual MPHW findings noted earlier show that nearly three times as many semantically unacceptable deviations were made in English as were made in German--a fact which would seem to support this idea.

In English subjects corrected grammatically unacceptable miscues more readily than semantically unacceptable ones, whereas in German the reverse was true (Table 4). However, the tremendous, unpatterned spread of correction percentages among the individual readings in English, when compared with individual syntactic and semantic unacceptability rates (residual MPHW), leaves one without an explanation as to why or how each rate of correction was established. It appears that there is actually no correlation whatever between the rate of correction and the rate of semantically unacceptable miscues when they are analyzed person by person in either language. It also appears that idiosyncratic and seemingly unobservable factors play a part in the correction process. (These factors will also be discussed in further detail later in this article.)

TABLE 4

Rates of Correction for Grammatically and Semantically Unacceptable Miscues

| Subjects | German | | English | |
|---|---|---|---|---|
| | Grammar | Semantics | Grammar | Semantics |
| 1 | 33.3% | 60.0% | 100.0% | 50.0% |
| 2 | 25.0% | 28.6% | 0.0% | 4.2% |
| 3 | 0.0% | 0.0% | 28.6% | 20.0% |
| 4 | 33.3% | 50.0% | 33.3% | 22.2% |
| 5 | 0.0% | 22.2% | 0.0% | 6.3% |
| 6 | 0.0% | 33.3% | 33.3% | 25.0% |
| 7 | 0.0% | 14.3% | 23.1% | 12.5% |
| Averages | 13.1% | 29.8% | 31.2% | 20.0% |

### *Syntactic and Semantic Acceptability*

In assessing Tables 5 and 6 for syntactic and semantic acceptability rates, some interesting phenomena surface. First, the overall grammatical acceptability is higher in English than in German by 6.8% in the first half and by a full 16.2% in the second half of the readings. Also, while the rate of syntactic acceptability increases in the second half of the English readings by an average 4.2% over the first half, the rate of syntactic acceptability actually decreases from one half to the other in the German readings by an average 5.2%. Previous data have shown the graphic proximity of all English miscues to be 14% higher in English than in German, which indicates that much closer graphic attention is being given to the English text than to the German. As a result, a German miscue might retain enough of the necessary semantic and syntactic qualities to fit the context of a reading passage, but it could have very little graphic or sound similarity with the expected response, particularly if the miscue is a substituted lexical item. Similarly, with full control of a variety of syntactic surface structures which could all convey the same underlying deep structure, the native German speaker is quite capable of deviating from the German text syntactically while still retaining the semantic import of the message being read, and indeed this frequently happens. But because the second-language reader may feel less competent in anticipating or recognizing the wide range of alternative surface structures for any given utterance's underlying deep structure, he may find himself reading the English text much more closely than he would a text in his own language in order to "decode" the particular syntactic structures given.

Secondly, no significant change in semantic acceptability can be noted (Table 6) from one half of the German readings to another, although individuals vary to some degree, either up or down. On the other hand, English semantic acceptability increases significantly from the first to the second half of the readings (the group as a whole averages a full 19.7% increase by the end of the reading), and uniformly so for each individual. Still, the overall rate of German semantic acceptability remains higher than that of English (a full 25.3% in the first half, dropping only 2.4% in the second half), which indicates the possibility of a comprehension base that is more extensive in the native language.

TABLE 5

First/Second Half Syntactic Acceptability Rate

| Subjects | German | | English | |
|---|---|---|---|---|
| | First Half | Second Half | First Half | Second Half |
| 1 | 87.5% | 20.0% | 87.5% | 90.9% |
| 2 | 72.7% | 81.8% | 68.2% | 61.8% |
| 3 | 33.3% | 50.0% | 68.4% | 83.3% |
| 4 | 70.0% | 70.6% | 86.9% | 79.2% |
| 5 | 81.8% | 76.5% | 82.1% | 90.2% |
| 6 | 70.0% | 81.2% | 78.9% | 76.9% |
| 7 | 62.5% | 61.5% | 53.6% | 72.7% |
| Averages | 68.3% | 63.1% | 75.1% | 79.3% |

TABLE 6

First/Second Half Semantic Acceptability Rate

| Subjects | German | | English | |
|---|---|---|---|---|
| | First Half | Second Half | First Half | Second Half |
| 1 | 50.0% | 20.0% | 43.8% | 63.6% |
| 2 | 63.6% | 75.8% | 18.2% | 29.4% |
| 3 | 33.3% | 25.0% | 31.6% | 44.4% |
| 4 | 70.0% | 70.6% | 21.7% | 37.5% |
| 5 | 63.4% | 61.8% | 42.8% | 61.0% |
| 6 | 60.0% | 62.5% | 36.8% | 69.2% |
| 7 | 45.8% | 53.8% | 14.3% | 42.4% |
| Averages | 55.2% | 52.8% | 29.9% | 49.6% |

### *Meaning Change*

Table 7, in fact, establishes the truth of the preceding assumption. It illustrates the degree to which the readers' oral miscues retain the ultimate sensibility and intention of the author; therefore, the percentages given simply indiciate no meaning change. While the degree of no meaning change for individual German readers does not provide a distinct pattern which can be readily compared with syntactic and semantic acceptability rates, a tendency does exist for no meaning change percentages to mirror rising or falling semantic acceptability rates in the second half of a reading.

For the group as a whole, it is evident that the rate of no meaning change stays relatively stable in German, decreasing only by .7% from the first half to the second half of the reading, which again resembles the average decrease in semantic acceptability seen in Table 6. Likewise in English, the degree of no meaning change miscues reflects the tendency to stay closer to the semantic acceptability figures than to those of syntactic acceptability. Just as all individual English rates of semantic acceptability increase consistently in the second halves, so, too, do all individual rates of no meaning change (except one--Subject 6). Moreover, there is a substantial gain in the group's average rate of no meaning change for the second half of a reading, which confirms the same trend established in Table 6.

TABLE 7

First/Second Half "No Meaning Change" Rate

| Subjects | German | | English | |
|---|---|---|---|---|
| | First Half | Second Half | First Half | Second Half |
| 1 | 50.0% | 40.0% | 43.7% | 63.6% |
| 2 | 59.1% | 78.8% | 22.7% | 26.5% |
| 3 | 66.7% | 25.0% | 21.1% | 38.8% |
| 4 | 60.0% | 76.5% | 34.8% | 58.3% |
| 5 | 63.6% | 70.6% | 57.2% | 65.8% |
| 6 | 70.0% | 62.5% | 68.4% | 61.5% |
| 7 | 58.4% | 69.3% | 27.6% | 39.4% |
| Averages | 61.1% | 60.4% | 39.4% | 50.6% |

There are three points, then, which could be made in summing up this section of the analysis. In the first place, there is no dramatic change in the number of miscues that measure meaning retention from one half of the German readings to another. The degree of semantic acceptability in German stays relatively the same (actually dropping by 2.4%). Secondly, all subjects reading in English appear to improve the quality of their miscues as they progress through their stories, in that the percentage of semantically acceptable and meaning-retaining miscues continues to increase. Finally, it appears that, while the number of high-quality no meaning change miscues increases as the subjects read in English, the highest degree of no meaning change is still maintained in the native language.

## CONCLUSIONS

We will now attempt to put into perspective the statistical information gathered on the individual English and German readings and retellings in order to answer the question asked on page 56 of this article: "How can such a large degree of comprehension be manifest in the German subjects' reading of English *despite* the number of miscues made--so many of which appear to destroy the semantic intentions of the text?"

The fact is that, while twice as many miscues were made in English as in German, and while three times the number of these miscues are of low quality or semantically unacceptable, much of what the subject is doing as he reads in English appears to compensate for this.

We have already established that the subjects' oral miscues in English are, on average, 79.3% syntactically acceptable by the second halves of their reading. They are also 49.6% semantically acceptable and 50.6% free of meaning change by the second half. Thus, although the subjects may have run into a "great deal of nonsense" (Smith, 1971), and have numerous low quality miscues with which they must contend, they are simultaneously seeking to "make sense" of their reading wherever they can. The most obvious strategies employed by the individual subject in his attempt to extract meaning from the English text are:

Reading primarily for grammatical structures that are complete and that can bear meaning by (a) replacing substituted or miscued lexical items with others of the same function and (b) correcting ungrammatical miscues where they interfere with semantics.

Attempting to gain semantic control of the reading by (a) creating a semantic "buildup" from one half of the story to the other and (b) increasing the quality of semantic miscues during the course of reading.

Keeping close to the graphic representation of the text by (a) attempting to maintain a close graphic/sound relationship to the lexical items while reading aloud and (b) observing the syntactic structures used by the author and adhering to them in an effort to get to the deep structure.

All of the strategies noted above are useful when the subject is allowing for an even "trade-off." In other words, the emphasis cannot be placed exclusively on any one of the three major language systems being used--syntax, semantics, or graphophonics.

Wherever low quality miscues are observed in quantity, a shift has taken place, such that the focus appears to be primarily on the third strategy. The result is an oral response to the text that approximates it according to graphics, sound, and even grammatical structure, but not according to semantic sensibility. The subject may be attending to the graphics so much that he "loses the thread," or semantic buildup, of what he is reading.

It is useful, at this point, to contrast the general findings with a brief profile of results for individual subjects. Table 8 provides information regarding each subject's grammatical and semantic acceptability rates, along with his comprehension score. Yet, while these scores are indicative of how much comprehension *may* have taken place, they must not be analyzed apart from the subject's retelling score. If an accurate assessment of reading proficiency is to be obtained, the oral retelling of each subject must be used alongside all other scores to map out the subject's personal reading profile.

TABLE 8

Grammatical/Semantic Acceptability and Retelling Rate

| Subjects | Grammar | Semantics | Retelling |
|---|---|---|---|
| | **German** | | |
| 1 | 61.5% | 38.5% | 99.4% |
| 2 | 78.2% | 70.9% | 80.0% |
| 3 | 45.5% | 27.3% | 92.5% |
| 4 | 70.4% | 70.4% | 97.5% |
| 5 | 78.6% | 62.5% | 85.0% |
| 6 | 76.9% | 61.6% | 82.5% |
| 7 | 62.0% | 50.0% | 58.8% |
| Averages | 67.6% | 54.5% | 85.1% |
| | **English** | | |
| 1 | 88.8% | 51.9% | 93.8% |
| 2 | 64.3% | 25.0% | 88.8% |
| 3 | 75.7% | 37.8% | 83.8% |
| 4 | 83.0% | 29.8% | 58.8% |
| 5 | 86.9% | 53.6% | 58.8% |
| 6 | 78.1% | 50.0% | 63.8% |
| 7 | 63.9% | 29.5% | 45.0% |
| Averages | 77.2% | 39.7% | 70.4% |

Subjects 1 and 3 have the least number of miscues in the study, and, as a result, have somewhat distorted scores for grammatical and semantic acceptability rates. Their retelling scores, however, reveal that they are indeed gaining meaning from their readings in a way that is unimpeded by the number of low quality miscues. Their retelling rates are among the three highest both in German and in English; their residual MPHW percentages rank as the lowest in German and are among the three lowest rates in English. Thus, they are the most proficient readers of the group in both languages.

Subjects 4, 5, and 7 have similar residual MPHW's in German, and their grammatical and semantic acceptability rates are also within a comparable range (within approximately 8% of each other). Their German retellings, however, appear to show a difference in proficiency--while 5 and 6 scored 85% and 82.5% respectively, 4 scored 97.5%. In English, the grammatical acceptability rates are within approximately 8% of each other, but semantic acceptability rates show that 4 dropped 20-24% below the other two. Only when looking at the retellings does one see that, in fact, their reading proficiency levels *are* similar. Subject 4 scored just as well as 5 in the retelling and only 5% lower than 6. Obviously, 4's semantic acceptability rate does not reflect the apparent "internal correction" or cognition of a number of items that showed up as oral miscues when she read aloud. In other words, even though the miscue statistics would seem to suggest considerable variance, the three subjects all prove to be moderately proficient readers in English. It is possible, and intriguing, to speculate that the same degree of "internal correction" may account for 4's considerably higher German retelling score, despite the relatively close parallelism between the semantic acceptability rates of these three subjects.

Subject 2's reading needs to be discussed at some length as she is the one subject whose English retelling score stands diametrically opposed to her other English reading scores in the analysis. Her residual MPHW is the second highest of the German readings and the highest of the English readings, indicating that a very large number of low quality miscues is being generated. This is particularly interesting in view of the fact that she has a relatively high number of miscues per hundred words in both languages. But 2's grammatical and semantic acceptability rates in German are actually quite high, which may be the reason why she scores a respectable retelling score of 80%. Her grammatical acceptability score in English is the second lowest of the group, however, and her semantic acceptability rate is the lowest of all (less than half of 1's). It is because of this that her English retelling score is remarkable--88.8%, or the second highest of the group. This situation is all the more surprising when her English scores are compared to those of 7. There is a close correspondence between 2's and 7's MPHW, residual MPHW, comprehending score, and grammatical and semantic acceptability rate. Indeed, all percentage scores are within 4.5% or less of each other, yet 2's English retelling score exceeds that of 7 by a full 43.8%. One possible reason for the discrepancy may be that 2 has learned somehow to circumvent the large number of unacceptable semantic miscues she makes in oral reading by concentrating instead on structural features. But the more plausible explanation is that 2, like 4, *silently corrects* much of what she reads for efficiency's sake and that these corrections cannot be seen in her oral reading scores.[9] Thus, 2 is actually a much more proficient reader than we might have otherwise expected.

The results show that 7 is reading least proficiently in both German and English. At 4.7 his MPHW is the third highest rate in German, and at 2.5 his residual MPHW is the highest. His grammatical and semantic rates of acceptability are somewhat closer to the group average--at 62% and 50% respectively--but 7's retelling score confirms that he is not reading primarily for meaning. With the lowest of all German retelling scores, 7's rate is only 58.8%--well below the group average of 85.1%. His English percentages do not fare any better. His MPHW and residual MPHW rates are the second highest--at 8.4 and 5.9 respectively. Furthermore, grammatical and semantic acceptability percentages are the lowest and second lowest--at 63.9% and 29.5% respectively. Subject 7's English retelling score serves to substantiate the lack of cognition that is occurring; it registers at only 45%, or 25.4% below the group average. It would be interesting to know what impediments are the most influential in keeping 7 from comprehending more of what he has read. While the act of cognition is one on which we can only speculate, ultimately it appears that 7 is unable to deal with his numerous miscues and high residual MPHW's, as 2 is able to, by correcting internally. Subject 7's low quality miscues accumulate from one half of the text to the other without being consistently recognized and resolved, so that he eventually stops reading primarily for meaning and instead reads for surface structure accuracy. This is verified by the fact that 7's miscues are approximately 12% higher in graphic similarity than comparable scores for 2. Also, his syntactic acceptability rate actually rises by about 20% in the second half of his reading, whereas 2's syntactic acceptability rate drops by about 7%. Thus, it appears that 7's attention to structure at the expense of meaning is his biggest liability.

While this study needs to have its findings confirmed with more extensive research on a larger number of subjects, the results do suggest a general correlation between the proficiency with which the German subjects read in their native language and in English.

Further, the more proficient readers in both languages appear to be producing relatively low residual MPHW's while maintaining relatively high rates of grammatical and semantic acceptability, particularly in the second halves of their readings, or else show evidence of internal correction.

Finally, the projected comprehending scores based on the number of semantically acceptable or high quality miscues appear to be less accurate measures of actual comprehension than the information gathered from MPHW, residual MPHW, syntactic acceptability, and retelling scores.

## IMPLICATIONS FOR INSTRUCTION

The conclusions drawn from the analysis lead the investigator to suggest some implications for the teaching of reading to the second-language learner.

In the first place, whenever possible the English instructor should be aware of the reading patterns and proficiency of students in their native language. Results of this analysis have shown that proficiency in reading English is related, to a considerable extent, to the degree of proficiency shown by subjects in processing written material in their first language. It is obvious that the proficiency level in the second language is never likely to be as high as that in the native language (unless the individual is, or becomes, truly bilingual); the significance of the findings resides in the fact that parallel *relationships* exist between reading strategies employed in both languages. (One will recall, in this context, how closely the rate of contentive function miscues coincided in the two languages.)

Therefore, while second-language instructors may not speak the students' native language and may find it difficult to obtain information on their native reading proficiency, they have an obligation to look beyond the parameters of English to establish a profile of the strengths and weaknesses the students may have in processing *written language* in general. The universals of reading dictate that the primary purpose of reading is comprehension, and that this, in turn, is achieved by making use of at least two fundamental language sub-systems--syntax and semantics--to arrive at a deep structure apprehension of surface structure forms.

In establishing how well the student is processing and comprehending written material, the focus must be on the manner in which the syntactic, semantic, and graphophonic (in the case of oral reading) language systems are being used and integrated. The *RMI*, as a diagnostic device, is especially suited to determine this because of its emphasis on the natural phenomenon of miscueing and the cognitive activity it involves.

In assessing the results of miscue analysis, the instructor should be cognizant of the following assumptions about proficient reading:

•For optimum semantic sensitivity, students must be bringing their prior knowledge and experience to bear on the reading. In other words, students need to know that prediction and anticipation are a vital part of the reading process, allowing one to gain meaning more easily. This requires some risk-taking, since syntactic structures may not be fully recognized, individual lexical items may not be fully apprehended semantically, and graphophonics may not always be providing the necessary information for acceptable pronunciations by the language learner. And yet, based on the hypothesizing, testing, predicting, and confirming strategies discussed at length by Goodman and Niles (1970), students can be actively involved in making all the necessary distinctions which give print meaning. Their own core of knowledge and experience extend to an understanding of language and its universal structures which cannot be overtly taught but which can be tapped in dealing with the second language.

•The instructor cannot assume that the number of miscues in students' oral reading has, by itself, any bearing on their ability to read for meaning (cf. the example of Subject 2). Those with fewer miscues tend to build up an "acclimatization" to the text, with regard to style, vocabulary, structure, and meaning, at a faster rate than the subjects with more miscues. But it has already been established that internal correction may be taking place among subjects with the larger number of miscues and that their rates of comprehension *can* be as high--if not higher--as those who maintain fewer actual miscues throughout their reading. It has been demonstrated that miscues are generated for numerous reasons and that they must be evaluated qualitatively as well as quantitatively. Because of their direct impact on meaning and possibility of meaning change, the rate of residual MPHW or the number of high quality miscues is much more significant than the total number of miscues made by an individual.

Graphophonic miscues, however, do not pose nearly as serious a problem for the reader since it is understood that the semantic component of language, at the deep structure level, is not directly related to the phonological component, which is restricted to the surface structure.[10] Indeed, foreign students can have a very clear conception of the lexical item they are reading orally, but the pronunciation of the word may exceed the boundaries of graphophonic acceptability for English. Thus, as Y. Goodman notes, parameters must be enlarged in order to account for the successive regularizations and approximations of this sort on the part of the second-language learner.

•Students must learn to be graphically selective as they read. They should be taking in only those minimal graphic and syntactic cues that are necessary for comprehension, since a concentration on semantics and a buildup of the intended meaning are primary to the reading process.

While much of second-language instruction requires that the student focus strongly on language structure, form, pronunciation, and graphic representation, reading instruction must do otherwise if true proficiency is to result. Only when students learn to make use of the vast amounts of syntactic and graphic redundancy available to them, and to attend to only the most critical of graphic features found on the printed page, can their chances for making sense out of what they read be great.

The instructor need not try to teach all such selectivity overtly; learning about and distinguishing between such critical features is often an unconscious process, and consistent and varied exposure to written English will, in many cases, provide the environment for the necessary distinctions.

The ultimate purpose of reading instruction, then, is to orient the student towards an active involvement with the text. This is as true for the native speaker of English as it is for the second-language learner. Students should be drawing on their knowledge and experience, predicting and hypothesizing about the text before them and selecting only those graphic and syntactic elements that will help them confirm their hypotheses. Meaning will then become apparent.

FOOTNOTES

[1] Barbara Willoughby Mott, A Psycholinguistic Analysis of Native German Speakers Reading English: Implications for Teaching Reading. Unpublished Master's Thesis, Michigan State University at Lansing, 1977.

[2] Arthur Gordon, "The Alchemist's Secret." Glenview, Ill.: Scott Foresman, 1961.

Lloyd Eric Reeve, "Caged." Ibid.

Hermann Hesse, "Der Wolf." In Ian C. Loram and L.R. Phelps, eds., Aus Unserer Zeit: Dichter des Zwanzigsten Jahrhunderts. New York: W.W. Norton, 1972.

Wolfdietrich Schnurre, "Das Märchen der Märchen." Ibid.

[3] While readability factors do not exist for determining the "grade level" of literature in German schools, comparable material would first be exposed to native German readers at approximately the age of 14-15. For the English selections, the SMOG readability formula was administered to both texts to determine approximate "grade levels" for their use in American public schools. In each case, a ninth grade readability was determined.

[4] Every subject was taken to a small room for the reading procedure; only the subject and the investigator were present. After an initial period of collecting personal information from the subject, the investigator asked the subject to read one German and one English story in their entirety, with no assistance or interruption. An audio tape was made of each reading. After the reading, the subject was asked to put the script aside and to retell, in his own words, all that he could recall about the story. The investigator did not comment or question until the subject had divulged all that he could remember by himself. Thereafter, the investigator attempted to elicit as much additional information as possible, but without ever referring to anything, general or specific, which had not already been mentioned by the subject himself in the retelling.

[5] The following examples illustrate this:

| | | |
|---|---|---|
| [v] → [w] | /nəŕwʌsli/ | nervously |
| | /wɪ́žɪtər/ | visitor |
| [w] → [v] | /vat/ | what |
| | /vərnt/ | weren't |
| [θ] → [s] | /sʌ́msiŋ/ | something |
| | /wɪs/ | with |

[6] Examples of this phenomenon include ($ indicates a nonsense word):

| | |
|---|---|
| $ /skraybd/ | scribbled |
| $ /súbəl/ | subtle |
| $ /dɪ́ǰəs/ | digits |

[7] Examples of this occurrence are:

| | |
|---|---|
| /ægɪtéšʌn/ | agitation |
| /krukɾ/ | crooked |
| /mɪĺdli/ | mildly |
| /dɪ́plomæt/ | diplomat |

[8] All of the subjects are well-educated by German standards; every subject was in his or her penultimate or final year of the Gymnasium, the German equivalent of a high school which prepares students for the university. this fact alone is significant, in that the Hochdeutsch used in school and any "academic environment" disallows many of the spoken dialectal features used in the community. In the words of Martin Joos (1967), speakers simply change their speech register from a "casual" to a "formal" level.

The second reason may be a corollary of the first: while the readings which the subjects undertook for the miscue inventory were not considered a test (this was emphasized at the time), the situation was in fact a formal one in that the readings were done aloud, before an unknown researcher, and a tape recorder was used.

[9] P. Rigg (1974) documents the case of one of her nine subjects who had the highest residual MPHW and the lowest comprehending score of all, yet had the second highest retelling score as well. Rigg attempts to explain the unusual character of this type of reading by suggesting that, according to records, her subject's formal reading training shifted from a language experience methodology to a heavily phonics-based methodology early in primary school. This, she feels, may have directed him to pay more attention to graphic/sound relationships, especially for oral production, than semantic and syntactic acceptability. "Somehow," Rigg notes, "with all the nonsense...he still manages to understand the story...he evidently does try to get to the meaning of the story, and is rather successful at it. He exemplifies the *silent correction* technique..." (191; emphasis mine).

[10] Judith Greene, *Psycholinguistics: Chomsky and Psychology*. Harmondsworth, Middlesex, England: Penguin Books, 1972:56.

# Reading in Spanish and English: Evidence from Adult ESL Students

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In 1966 Kolers noted the lack of baseline research into the reading process. Since that time, controlled experiments with adults (for example, Kolers 1969, 1973) and numerous in-depth analyses with children (for example, Goodman 1969, Goodman and Burke 1973) have been conducted which support a psycholinguistic perspective of the reading process. This perspective characterizes reading as an active process in which the reader samples linguistic cues and then, on the basis of these cues, produces hypotheses about the message of the writer. As Goodman (1970c) states in his oft-quoted definition of reading:

> ...reading is a psycholinguistic guessing game. It involves an interaction between thought and language. Efficient reading does not result from precise perception and identification of all elements, but from skill in selecting the fewest, most productive clues necessary to produce guesses which are right the first time. (260)

The psycholinguistic perspective of reading was developed from research into the reading behavior of: (1) children reading in their native language (English); (2) proficient adult readers reading in their native language (English); and (3) proficient bilingual adult readers reading in English and in French.

However, as recently as 1976, Robinett noted the lack of research into the reading behaviors of second language learners (specifically, ESL readers; see also Hatch 1973). Rigg (1976, 1977) and Barrera (1978) have provided the first glimpse of the reading process in English as a Second Language (ESL), as revealed by the analysis of the oral reading miscues of children. To date, there have been no published accounts of studies which describe the reading behaviors of adult ESL learners as they attempt to master reading in the target language. The two studies[2] reported here were developed, in part, to provide preliminary data for that description.

The objective of the studies was to describe the first language (L1) and second language (L2) reading behaviors of adult Spanish-speakers who are proficient readers in their native language. The principal research questions addressed were:

1. Can the psycholinguistic perspective of reading explain the reading performance of proficient, adult, Spanish-speaking readers, reading in Spanish and in English?
2. Do these individuals transfer their reading skills to the second language?

In the first study, the cloze test performances of good and poor L1 readers were examined. In the second study, the oral reading performances of a good

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and a poor L1 reader were analyzed according to established miscue procedures. The former provides a description of group performance; the latter provides an in-depth analysis of the reading behaviors of individuals.

In both studies, confirmation of the psycholinguistic perspective of reading was to be recognized if the analysis showed that the subjects used graphophonic, syntactic, and semantic cues to produce hypotheses about the message of the writer. That is, psycholinguistics would predict that the readers' cloze test responses and oral reading behaviors would not reveal "precise identification of all elements" but, rather, their attempts to understand a text using available linguistic cues. With regard to question number two, an affirmative answer was to be accepted if good L1 readers maintained an equal advantage over poor L1 readers in both Spanish and English. It was assumed that, given equivalent proficiency in the second language, the superior reading skills of the good readers would provide them with an equal advantage over the poor readers in both languages. This assumption is based on a "reading universals hypothesis." If the ability to read is acquired only once, and if the reading process is basically the same in all languages, we would logically expect good native-language readers to be good second language readers. Furthermore, we would expect good readers to maintain their advantage over poor readers in the second language.

There was no independent criterion available to determine the L1 reading proficiency of the subjects used in this study. "Good" readers and "poor" readers were so designated on the basis of their cloze test performance. Cloze tests have been shown to be valid and reliable measures of reading proficiency (Taylor 1956, Oller 1975, Oller et al. 1972, Oller and Tullius 1973). However, it is important to keep in mind that for the purpose of this study, "good/poor readers" actually means "good/poor cloze test takers." The possibility exists that cloze tests measure a special skill which is sufficient but not necessary to proficient reading and that subjects identified as poor readers here are merely poor cloze test takers. Because there is no way to confidently determine the difference between the two, the potential distinction will not be continued throughout the discussion. Rather, subjects will be referred to simply as "good readers" or "poor readers." And, unless otherwise indicated, the designation will refer to L1 reading ability.

## STUDY I: CLOZE TESTS

### *Subjects*

The subjects were twenty-one low-level ESL students enrolled in intensive courses at the English Language Institute, University of Michigan. The subjects (14 males and 7 females) were all young adults, high school graduates (a few had college degrees), and citizens of Latin American countries (11 from Mexico, 8 from Venezuela, 1 each from Colombia and El Salvador). They were in the United States to continue their professional education. All subjects were therefore assumed to be proficient readers in their native language. The majority had recently arrived in the United States and were therefore relatively equal in terms of exposure to intensive training in ESL and to second language testing procedures.

### *Tests*

Cloze tests are typically constructed by deleting every *nth* word from a prose passage. Subjects are required to fill each of the resulting blanks with an appropriate word. The tests are scored by counting the number of times the subjects restore the original word to the context (Exact Word method) or by counting all responses which are syntactically and semantically acceptable (Acceptable Word method).

For this study, cloze tests were required in Spanish and English which were deemed appropriate, both in difficulty and in content. For the Spanish tests, two Latin American short stories were selected. "Una Carta a Dios" by Gregorio Lopez y Fuentes (1971) and "La Camisa de Margarita" by Ricardo Palma (1948). The English cloze tests were taken from ESL textbooks which were not currently being used in the intensive courses at the English Language Institute ("Meet Don Rogers," Mellgren and Walker 1973a; "The Life of a Housewife," Alesi and Pantell 1972; "My Summer Vacation," Mellgren and Walker 1973b).

A rational, rather than a mechanical, deletion procedure was used to produce the tests (see Greene 1965 for a discussion of rational deletion procedures). After the customary lead-in of several sentences, every seventh to tenth word became a candidate for deletion. An effort was made to delete words whose replacement would seem to require comprehension of the entire passage. Words most often deleted under this procedure were discourse markers, "content" words (nouns, verbs, adjectives, and adverbs), and words with specific referents earlier or later in the text. It was hoped that this deletion procedure would produce tests which were especially sensitive to constraints across the text. A special test administration with native speakers indicated, in fact, that the deletion procedure did produce cloze tests in which a large number of the blanks could not be correctly filled without knowledge of the larger context (see Clarke 1978, 52-55). It was felt that such tests would be stronger measures of reading proficiency than tests constructed by mechanical deletion procedures. The Spanish battery produced by this process contained 1903 words and 90 blanks, the English battery, 602 words and 57 blanks (Appendix A).

### *Analysis*

In a cloze test, a response which is totally syntactically and semantically acceptable indicates that the subject has understood what he has read. Responses which are not acceptable provide evidence about the processes used by the subject in responding to the mutilated text. In order to describe the linguistic cues used by subjects in responding to the cloze tests, an instrument was developed which permits researchers to characterize the "degree of acceptability" or "quality" of a cloze test response (Appendix B). The tool (an adaptation of the Goodman Taxonomy; see Goodman and Burke 1973) allows for an evaluation of syntactic and semantic acceptability on a scale ranging from totally unacceptable, through acceptable only with parts of the sentence, to acceptable in the sentence and totally acceptable (see Clarke and Burdell 1977 for a detailed description of the tool and an explanation of coding procedures):

Syntactic Acceptability (SYNAC)

4: totally acceptable
3: acceptable in the sentence; the response satisfies sentence-level syntactic constraints, but violates discourse constraints
2: acceptable only with the following portion of the sentence; from the response on, the sentence is syntactically acceptable
1: acceptable only with the preceding portion of the sentence; the sentence is syntactically acceptable up to and including the response
0: totally unacceptable

Semantic Acceptability (SEMAC)

6: totally acceptable
5: totally semantically acceptable if minor syntactic constraints are ignored; the sentence and/or the response require minor syntactic changes

4: acceptable in the sentence; the response violates passage-level meaning constraints
3: acceptable in the sentence if syntactic constraints are ignored; the sentence and/or the response requires minor syntactic changes to become acceptable at the sentence level
2: acceptable only with the following portion of the sentence; from the response on, the sentence is semantically acceptable
1: acceptable only with the preceding portion of the sentence; the sentence is semantically acceptable up to and including the response
0: totally unacceptable
9: doubtful; the response seems to fit the context, but it is impossible to determine the contextual motivation for it

The twenty-one subjects took the Spanish and English cloze test batteries. Their tests were first scored for exact word replacement (Exact Score). Two coders, working independently, then evaluated all non-exact responses using the analysis tool described above.[3] All responses receiving scores of SYNAC 4, SEMAC 6 were added to the subjects' exact scores. The sum became the Acceptable Score. The remaining responses (i.e., unacceptable responses: those receiving codings of less than SYNAC 4, SEMAC 6) became the data for analysis.

Two pools of unacceptable responses were required for analysis. The best readers and the poorest readers were selected until two approximately equal pools of responses were identified for analysis. This procedure produced a Good Reader group of 8 subjects and a Poor Reader group of 6 subjects. The Spanish response pool contained 68 responses for the Good Reader group and 124 responses for the Poor Reader group; the English response pool contained 129 responses and 157 responses, respectively. Tables 1 & 2 provide a profile of the two groups.

As previously mentioned, reading ability was determined by the subjects' Exact scores on the Spanish cloze tests (SPCLZ (exact)). The results indicate that the two groups represent different reading abilities. The Good Reader mean is 60, with a range of 58-65, while the Poor Reader mean is 45, with a range of 33-50. The means, plus the eight-point spread between the highest Poor Reader and the lowest Good Reader, assures us that the two groups represent substantially different reading abilities. Furthermore, the results of the English placement test indicate that the two groups are of equivalent English competence. (A T-test for differences between means showed that there was no significant difference between the two groups.)

### *Results*

Immediate evidence is available that good L1 readers are good L2 readers. First, the rank order of the good and poor reader groups is maintained in the second language; there is a positive correlation between the Spanish and English cloze test performances (Exact scores, $r = .53$, $p < .01$). And second, the Acceptable means for the two groups on the English cloze tests show a ten percentage point difference. A T-test for difference between means shows that the difference is significant at the .01 level. Thus, despite the 10 point overlap in the range of scores, the good readers as a group are better L2 readers than the poor readers.

The unacceptable cloze responses were analyzed for syntactic and semantic acceptability. The Spanish results are pictured in Tables 3 and 4.

As Tables 3 and 4 show, the difference between good and poor readers appears to be their use of syntactic and semantic cues when confronted with blanks for which they have no immediate answer. The good readers produced responses which conformed to meaning constraints (SEMAC 5:41% compared to 25% for the poor readers) even though such responses violated syntactic constraints. The responses of the poor readers, on the other hand, indicate a much greater sensitivity to syntactic constraints than to semantic constraints (SYNAC 4:50% compared to the good readers' 35%).

The results for the English cloze tests are provided by Tables 5 and 6. The two groups appear virtually equal in their ability to utilize syntactic cues when confronted with difficult blanks (Table 5); the greatest difference between good and poor readers on any analysis category is two percentage points. However, of primary interest here is the SEMAC code category 5 (Table 6) where only four percentage points separate the Good Reader group from the Poor Reader group. Good readers did not demonstrate the expected advantage over poor readers in producing semantically acceptable responses.

### *Summary*

The answers to the two research questions posed earlier appear to be "yes" and "to some extent." With regard to question one--"Can the psycholinguistic perspective of reading explain the reading performance of proficient, adult Spanish-speaking readers, reading in Spanish and in English?"--the cloze results provide partial confirmation; although only a limited view of the reading process is available from an analysis of cloze performance, it is clear that the subjects were producing hypotheses about the text based on syntactic and semantic cues. The cloze test analysis instrument provided a framework for identifying the linguistic clues used by the subjects in producing those hypotheses, and the degree of success attained.

With regard to question two--"Do these individuals transfer their reading skills to the second language?"--the results are ambiguous. When reading in English, the good readers were superior to the poor readers in that they were able to produce more acceptable cloze responses. Yet when confronted with difficult blanks, the good readers appear to be little better than the poor readers in producing high quality guesses.

## STUDY II: ORAL READING MISCUES

### *Method*

The cloze test analysis described above provides group performance data. Oral reading miscue research, on the other hand, produces a great quantity of data for each subject, providing an in-depth analysis of individual reading behaviors. The research procedure generally followed (see, for example, Goodman 1969 and Goodman and Burke 1973) involves the following steps: After identifying the population from which the subjects will be taken, reading selections of moderate difficulty and appropriate content are selected. Each subject reads the selection orally, in its entirety, and relates as much as he can remember when he has finished. During the retelling of the story, the researcher does not comment or ask questions. When the subject has exhausted his initial impressions of the selection, the researcher questions him further about the passage, being careful not to add any information not already supplied by the subject. The reading, retelling, and question-answer period are all tape recorded. The researcher then listens to the tape repeatedly until all deviations from the text have been noted on a master worksheet. The miscues for analysis are selected and analyzed according to the Goodman Taxonomy of Reading Miscues (Goodman and Burke 1973). The retelling is used to provide a comprehension score for the subject.

### *Subjects*

Two criteria were used to select subjects for the oral reading miscue analysis. First, it was necessary to have subjects whose speech was relatively clear, both in Spanish and in English (Rigg 1977 mentions clarity as a primary consideration in the "Miscue-ESL Project"). The second criterion was dictated by the research design; it was necessary to select a good L1 reader and a poor L1 reader who were of comparable ESL proficiency. Table 7 provides a profile of the two subjects selected for analysis. The good reader, Andrade (not his real name), received the highest score on the Spanish cloze test (rank: 1; score 69/90). The poor reader, Baca (not his real name), received the third lowest score on the Spanish cloze test (rank: 72, score 49/90). Their ESL proficiency was approximately the same; Baca shows a higher Placement Test score, but they both scored in the lower third on the English cloze tests. In addition they were in the same mid-level ESL class at the English Language Institute.

### *Analysis*

Reading selections in Spanish and English were selected according to four criteria: (1) The selections were new to the readers. (2) They were moderately difficult. (3) They were of sufficient length to insure the availability of syntactic and semantic context. (4) They were semantically complete units. The Spanish reading, "Meditación del Saludo" (Ortega y Gassett 1957), is a philosophical treatise on the handshake, an extremely complex reading of 4839 words. The English selection, "Cold Cash" (Hoke 1965), was taken from an ESL reader which was not being used at the English Language Institute at the time of the testing. It is a short story of 960 words intended for intermediate-level ESL students (Appendix C contains excerpts of both selections).

The Spanish and English reading performances of Andrade and Baca were elicited using the procedures described above. All deviations from the text (i.e., Observed Response did not equal Expected Response) were noted on the master sheet. Miscues for analysis were selected by a procedure (see Goodman and Burke 1973, pages 25-26) which eliminates all non-significant miscues from consideration; that is, only miscues which represented a potential loss or change of meaning were included. The first fifty miscues thus identified for each reading were evaluated on thirteen categories of the Goodman Taxonomy of Oral Reading Miscues (Goodman and Burke 1973) (see Appendix D):

1. Correction
2. Dialect
3. Graphic Proximity
4. Phonemic Proximity
5. Allolog
6. Syntactic Acceptability
7. Semantic Acceptability
8. Syntactic Change
9. Semantic Change
10. Intonation
11. Bound and Combined Morphemes
12. Word and Free Morpheme
13. Grammatical Category and Surface Structure

All coding decisions were reached by two coders working independently; disagreements which could not be resolved by repeated examination of the tape were resolved by a third coder.[4]

Because the Taxonomy was developed for the analysis of miscues generated by children reading in English, a number of changes were required for the analysis of adult ESL students reading in Spanish and English. First, two codes were added to the Taxonomy under Dialect to account for first language interference and for inter-language phenomena (see Selinker 1972). Second, a major change in coding procedures was adopted to account for the apparent ease with which adults process information when reading orally. Coding instructions for Semantic Acceptability were amended so that miscues with "minor syntactic errors" could be given full semantic credit. The assumption was made that such errors are so slight that they do not significantly affect meaning. (The resulting code categories are similar to the codes for Semantic Acceptability used in the cloze analysis.) Third, code categories were added to Grammatical Category and Surface Structure to account for reflexive verbs, verbs with pronominal suffixes, and phrasal contractions, structures which occur in Spanish but not in English.

Finally, major changes were made in the procedure for evaluating subjects' comprehension of a selection. Miscue researchers typically evaluate subjects' comprehension of passages by producing a typescript of the retelling and then evaluating the typescript against an exhaustive outline of the passage read. Scores can range from 0 to 100. Although researchers working on a project for a period of time might develop enough coder reliability to make such an evaluation meaningful, the system is too subjective to permit replication by researchers working independently of each other.[5]

For this research project, a different method of determining reader comprehension was developed. First, the retellings of five subjects (including the two subjects used in the analysis) were transferred to two tapes; one tape contained five retellings of "Meditación del Saludo," and the other tape contained five retellings of "Cold Cash." Bilingual Spanish/English speakers were then engaged to listen to the tapes and to evaluate the comprehension of the subjects by ranking them from best to worst using standard criteria. The purpose of the ranking was to produce an estimation of the relative degree of comprehension attained by the subjects. This procedure allows the researcher to characterize one reader as "the good reader" and another as "the poor reader" without implying that an absolute standard of reading effectiveness has been applied. The benefits of this scheme are two: it precludes investigator bias, and it facilitates replication.

### *Results*

A detailed explanation of the results on all 13 analysis categories is beyond the scope of this paper (for such an explanation, see Clarke 1978). The discussion which follows provides an overview of the results; detailed comments are limited to the most important code categories. Table 8 presents a summary of the reading performance of Andrade and Baca in Spanish and in English. The results in each category portray Andrade as the better reader, both in Spanish and in English.

MPHW (miscues per hundred words), the basic quantitative measure used in miscue analysis, is computed by dividing the total number of words read into the total number of miscues, and multiplying by 100:

$$\text{MPHW} = \frac{100\ (\text{Miscues})}{\text{Total \# words}}$$

Studies (for example, Goodman and Burke 1973) have revealed a fairly consistent relationship between miscue quantity and reading proficiency: good readers tend to make fewer miscues than do poor readers.[6] The performance of the two readers in this study confirms this expectation. Andrade produced fewer miscues than Baca, both in Spanish (2.0 compared to 4.6) and in English (5.8 compared to 6.8).

Whereas MPHW provides an index of the quantity of miscues, the Comprehending score measures the quality of miscues produced by a subject. The score is derived by adding the percent of semantically acceptable miscues (Code categories SEMAC 4 and 6) to the percent of semantically unacceptable miscues (Code categories SEMAC 0-3) which the reader has successfully corrected.

$$\text{Comprehending} = \%\ \text{SEMAC 4 \& 6} + \%\ \text{CREC 1.}$$

Unlike a comprehension rating, which measures the final amount of understanding achieved by a subject, the comprehending score provides insight into the *process* of understanding. It reveals the reader's awareness of the effect of his miscues on meaning, and the effort he makes to correct semantically unacceptable miscues. Andrade displays greater sensitivity to the quality of his miscues than does Baca. In Spanish, Andrade produced a Comprehending score of 82%, compared to Baca's 70%; in English their scores were 52% to 44% respectively.

If the quantity measure, MPHW, is reduced by the quality measure, Comprehending, the result is the frequency of unacceptable, uncorrected miscues per hundred words, the Residual MPHW. This figure represents the percentage of miscues which may disrupt meaning. Andrade's scores on this measure are superior to Baca's: .32 to 1.3 in Spanish and 2.5 to 3.5 in English.

The Comprehension rankings confirm the evaluation of the three process measures; Andrade was ranked first in Spanish and tied for second in English, while Baca tied for last in both retellings.

Although space does not permit a detailed discussion of the results on each of the 13 code categories, it is important to report that the reading behaviors of these two adult ESL students resembled, in most respects, the reading behaviors of native English speaking readers (Goodman and Burke 1973) and the reading behaviors of children for whom English is a second language (Rigg 1976, 1977): the good reader produced fewer miscues than did the poor reader; neither subject corrected many miscues; their miscues were generally of high graphic and phonemic proximity to the text; they produced no allologs; their miscues produced little syntactic or semantic change; the most frequent miscue was the word-level miscue in which one word was substituted for another.[7]

Two of the code categories, however, merit closer inspection. Tables 9 and 10 provide information on the syntactic and semantic acceptability of the readers' miscues in Spanish and in English. Andrade's performance, as reflected by these two categories, shows him to be the superior reader both in Spanish and in English. SYNAC indicates the extent to which a reader's oral reading conforms to the syntactic constraints of the passage. SEMAC reflects the reader's sensitivity to meaning constraints. Previous studies (for example Goodman and Burke 1973, Rigg 1977) have shown that good readers generally produce more syntactically and semantically acceptable miscues than do poor readers. The results of this study provide a slightly different picture. In Spanish, the two readers appear equal in their ability to produce syntactically acceptable miscues (52%), while in English, Andrade demonstrates a slightly greater sensitivity to syntactic constraints (54% to 46%, respectively).

Semantic Acceptability appears to differentiate the two readers better than Syntactic Acceptability. Here, 80% of Andrade's miscues on the Spanish reading were either totally acceptable or acceptable with minor syntactic adjustments, compared to 64% for Baca. The totals drop substantially when their English performance is considered, but Andrade still performs better than Baca (46% to 38%).

### *Summary*

The oral reading miscue results provide answers to the two research questions which are similar to those provided by the cloze test results. With regard to question one--"Can the psycholinguistic perspective of reading explain the reading performance of proficient, adult Spanish-speaking readers, reading in Spanish and in English?"--the answer appears to be "yes." The reading performance of Andrade and Baca, as revealed by miscue procedures, is basically the same as it is for children studied by Goodman and others; both readers produced miscues that demonstrated their attempts to utilize graphophonic, syntactic, and semantic cues to extract the author's message. With regard to question two--"Do these individuals transfer their reading skills to the second language?"--the results again lend themselves to conflicting interpretations: It is clear that Andrade is a better reader than Baca in both Spanish and in English; in all the significant analysis categories, Andrade's performance is superior to Baca's. Again, however, the good reader's superiority over the poor reader decreases substantially when their English reading performances are compared to their Spanish reading performances.

## CONCLUSIONS AND IMPLICATIONS

As a preliminary investigation into the reading behavior of adults reading in a first and second language, the present studies have a number of limitations. First, because of the in-depth nature of the analysis, it was impossible to study the reading performances of a large number of subjects. The results are, therefore, suggestive rather than definitive, and cannot be generalized to other populations without qualification. Second, the studies are based on the assumption that the behaviors elicited by cloze tests and oral readings are representative of the subjects' silent reading behaviors. All conclusions must be tempered by the possibility that the elicitation instruments have produced behaviors which are peculiar to those tools, and not in fact representative of the subjects' reading behaviors. Nonetheless, the results provide theoretical, pedagogical, and methodological implications.

### *Theoretical*

The results of this study seem to justify some form of a reading universals hypothesis. The adult readers studied here, reading in Spanish and in English, appeared to be utilizing the same basic behaviors as the proficient readers in the Detroit study (Goodman and Burke 1973) and other miscue research projects (for example Rigg 1976, 1977, Sims 1972). For them, as for the subjects of previous studies, reading is not an exact process which depends upon accuracy at all levels of language, but rather, it seems to be a process of hypothesizing, testing, confirming, rejecting.

The exact nature of the universal processes, and the linguistic levels on which reading is different--or the same--in different languages is not clear at this point. Goodman (1973:27) asserts that "...the reading process will be much the same for all languages with minor variations to accommodate the specific characteristics of the orthography used and the grammatical structures of the language." Glimpses of potential "minor variations" are available from the miscue results reported here. For example, in Spanish Andrade and Baca produced exactly the same number of syntactically acceptable responses. Andrade, of course, produced a substantially higher percentage of semantically acceptable miscues. In other English miscue studies, however, just as in the English data from this study, the good readers consistently hold the advantage in *both* syntactic and semantic acceptability. With regard to another code category, grammatical form and function, it may be significant that in Spanish these readers produced miscues on function words more frequently than on any other part of speech, while in English they tended to miscue on nouns more than on the other grammatical categories; for the English speaking subjects of the Detroit study (Goodman and Burke 1973), the grammatical category most frequently involved in miscues was the noun. These two examples would seem to indicate that the language in which one is reading does, indeed, influence one's reading behavior.

A further implication of the present studies involves reading in a second language. As mentioned earlier, models of L2 reading have not been developed because of a lack of research data to support them. Rather, theorists have assumed that reading is basically the same in all languages, and teachers have developed methods and materials to reflect research insights into L1 reading.

The results of this study suggest that, while the assumption of universals may be justified, the role of language proficiency may be greater than has previously been assumed. Cloze test performance and oral reading behavior suggest the presence of a "language competence ceiling" which hampers the good L1 reader in his attempts to use effective reading behaviors in the target language; apparently, limited control over the language "short circuits" the good reader's system, causing him to revert to "poor reader strategies" when confronted with a difficult or confusing task in the second language.

This suggests that it may be inaccurate to speak of "good readers" and "poor readers." It is obvious that the term "good reader" does not apply with equal precision to Andrade when he reads in English as it does when he reads in Spanish. Perhaps there are not "good" and "poor" readers, but merely "good" and "poor" reading behaviors, which characterize all readers at different times.

### *Pedagogical*

The research reported here would seem to support psycholinguistics as a model for curriculum planning, methods, and materials development in the teaching of ESL reading, at least to Spanish speakers. Some version of the reading universals hypothesis has been tentatively confirmed, indicating that the fundamental processes of reading are the same in Spanish and in English. It would, therefore, seem justifiable to build reading programs that emphasize the behaviors which this and previous research show to be characteristic of good readers. Among the behaviors which seem most productive and which might be effectively taught are: concentration on passage-level semantic cues; the formulation of hypotheses about a text before reading to confirm, refine, or reject those hypotheses; the de-emphasis of graphophonic and syntactic accuracy, that is, developing a tolerance for inexactness, a willingness to take chances and make mistakes.

On the other hand, the results of these Spanish-speaking adults reading in English underscore the importance of language skills for effective reading. This finding supports the activities of "traditional" teachers (Lado 1964, Finocchiaro 1969) whose approach to teaching reading emphasized grammar lessons and vocabulary instruction, as well as recent attempts to combine reading skills work with language skills development (Baudoin et al. 1977, Clarke and Silberstein 1977, Eskey 1973). The dilemma for L2 reading teachers is one of attempting to provide students with a "global view" of the task--by emphasizing the inexact nature of reading, the need for guessing, taking chances, etc.--while at the same time helping to acquire the fundamental language skills to facilitate the process. Gibson and Levin (1975) raise questions about Goodman's "psycholinguistic guessing game" (Goodman 1970c) description of reading which illustrate the dilemma:

> 1. On what basis does the reader make his predictions?
> 2. What is the nature of his predictions? Is the reader guessing succeeding letters, words, phrases, sentences, or the general plot of meaning of the text? Said another way, what units is he predicting?
> 3. How does he check his predictions? How does he know where to look in the subsequent, or perhaps preceding text? What informs the reader where to focus his attention?
> 4. What constitutes a confirmation? What happens if he finds he has guessed wrong?

All of the above questions can be answered on virtually every level of language, ranging from the phonemic up to the discourse level, and beyond, to the realm of knowledge that is outside the text. For the second language learner the task must seem impossible at first, as he attempts to master the different levels of the target language while simultaneously striving to use the language for communication.

Attempting to teach someone to use the phonemic, morphemic, syntactic, semantic, and discourse cues of the language before he has learned what they are, how and when they occur, and their contextual variations seems unrealistic. Yet the familiar example of the student who knows all the words and grammatical structures of a sentence or a paragraph and yet cannot comprehend what he has read is the result of learning the elements of language without understanding the processes which one utilizes to communicate with those elements. In other words, ESL reading teachers must emphasize both the *psycho* and the *linguistic*.

Another implication for teachers concerns the "short circuit" hypothesis put forth to explain the reduced efficiency of good L1 readers reading in a second language. As mentioned earlier, the difference between the good and poor L1 reader on English reading tasks was not as great as it was on Spanish reading tasks. It is possible, therefore, that two students could produce similar L2 reading behaviors for different reasons: one because he is a poor reader, the other because he has not been able to transfer his L1 reading skills to the second language. It would be unrealistic to suggest that the teacher produce different materials or methods to solve the problems of each student, but an awareness of the different sources contributing to similar behaviors would certainly increase the teacher's sensitivity and, therefore, the potential for overcoming the students' difficulties. Such sensitivity might mean that exercises developed for one student need only *remind* him of the purpose and methods of effective reading, while exercises developed for another student would attempt to *teach* him how to read more effectively.

### *Methodological*

The present study has confirmed the value of oral miscue procedures for the investigation of the reading behaviors of adults. The results removed the concern that adult L1 reading behavior would be so effortless as to produce very little data for analysis. Indeed, the quality and quantity of miscues produced by these adults were strikingly similar to the quality and quantity of miscues produced by children in previous studies.

The study raised a number of issues which future miscue work should address. The first, and most important, concerns the reliability of the picture of silent reading provided by oral reading. Hood and Gonzalez (1975) discuss the issue at length, pointing out that all oral reading research depends on the assumption (not always made explicit) that oral reading is equivalent to silent reading, yet little work has been done to confirm the relationship. It is slightly suspicious that the reading behaviors of the subjects in this study (adult Spanish speakers) were so similar to the reading behaviors of the children (English speakers) in previous research. One explanation is that reading is a process characterized by universals; another is that the oral reading task so restricts the performance of the subjects that their miscues reveal similarities which would not be evident if their silent reading could be observed.

Another issue of miscue methodology which needs attention is that of the comprehension measure. The weaknesses of the "retelling" procedure have been discussed by Goodman (Goodman and Burke 1973); the difficulty involved in getting subjects to tell everything they remember (indeed, of getting some subjects to speak at all) and the problem of inter-judge reliability are the two most serious weaknesses. With adults and older children, an objective test might be used in conjunction with the retellings in an attempt to improve the accuracy of the comprehension assessment. If the test were of the discrete point variety, the questions could be printed on separate cards and presented to the subject one at a time to minimize learning from the test which would inflate his comprehension score.

The comprehension measure in its present form is a serious weakness in miscue research methodology. Whereas a number of researchers working together undoubtedly achieve respectable levels of inter-judge reliability, individual researchers working outside the pale of the miscue group are severely hampered in their attempts to replicate research. Until a more reliable measure of comprehension is devised, the scores provided by researchers will have to remain mere "rough estimates" whose principal value is to rank subjects in relation to each other.

And finally, the results seem to confirm the value of cloze tests in research into the reading process: The cloze analysis tool (Clarke and Burdell 1977) provides a framework for evaluating the quality of cloze responses. The present study indicates that good readers' unacceptable responses are of greater semantic accuracy than those of poor readers. Further research is needed to ascertain the exact nature of the linguistic cues used by good readers--especially as these relate to discourse constraints (but see, for example, Flahive 1978)--but the results reported here indicate that explorations with cloze tests will prove fruitful.

TABLE 1

Subjects for Cloze Analysis: Spanish Cloze Scores and Responses for Analysis

| | ID Number | Placement Test Percent | SPCLZ Rank (exact) n = 74 | SPCLZ Score (exact) n = 90 | SPCLZ Score (ACCEP) n = 90 | Responses for Analysis |
|---|---|---|---|---|---|---|
| **Good L1 Readers** | | | | | | |
| 1. | 12 | 47 | 5.33 | 65 | 87 | 3 |
| 2. | 19 | 37 | 10.50 | 62 | 81 | 9 |
| 3. | 4 | 38 | 12.33 | 61 | 78 | 12 |
| 4. | 16 | 47 | 15.50 | 60 | 80 | 10 |
| 5. | 2 | 19 | 17.20 | 59 | 82 | 8 |
| 6. | 5 | 36 | 17.20 | 59 | 80 | 10 |
| 7. | 7 | 46 | 17.20 | 59 | 83 | 7 |
| 8. | 17 | 44 | 22.20 | 58 | 81 | 9 |
| | | | | | | 68 Total |
| | | m=39.25 | | m=60.37 | m=81.50 | |
| | | R=19-47 | | R=58-65 | R=78-87 | |
| **Poor L1 Readers** | | | | | | |
| 1. | 14 | 34 | 58.50 | 50 | 72 | 18 |
| 2. | 11 | 41 | 60.20 | 48 | 74 | 16 |
| 3. | 20 | 46 | 60.20 | 48 | 73 | 17 |
| 4. | 1 | 26 | 68.50 | 46 | 67 | 23 |
| 5. | 8 | 67* | 70.50 | 45 | 75 | 15 |
| 6. | 6 | 36 | 74 | 33 | 55 | 35 |
| | | | | | | 124 Total |
| | | m=41.6 | | m=45 | m=69.33 | |
| | | R=26-67 | | R=33-50 | R=55-74 | |

*Took placement test previously.

TABLE 2

Subjects for Cloze Analysis: English Cloze Scores and Responses for Analysis

| | ID Number | Placement Test Percent | ECLZ Rank (exact) n = 21 | ECLZ Score (exact) n = 57 | ECLZ Score (ACCEP) n = 57 | Responses for Analysis |
|---|---|---|---|---|---|---|
| **Good L1 Readers** | | | | | | |
| 1. | 12 | 47 | 4.50 | 35 | 45 | 12 |
| 2. | 19 | 37 | 2 | 39 | 48 | 9 |
| 3. | 4 | 38 | 7 | 32 | 42 | 15 |
| 4. | 16 | 47 | 11.25 | 26 | 35 | 22 |
| 5. | 2 | 19 | 16.50 | 23 | 31 | 26 |
| 6. | 5 | 36 | 11.25 | 26 | 36 | 21 |
| 7. | 7 | 46 | 8 | 30 | 40 | 17 |
| 8. | 17 | 44 | 1 | 41 | 50 | 7 |
| | | | | | | 129 Total |
| | | m=39.25<br>R=19-47 | | m=31.50<br>R=23-41 | m=40.87<br>R=31-50 | |
| **Poor L1 Readers** | | | | | | |
| 1. | 14 | 34 | 11.25 | 26 | 31 | 26 |
| 2. | 11 | 41 | 6 | 33 | 41 | 16 |
| 3. | 20 | 46 | 15 | 24 | 31 | 26 |
| 4. | 1 | 26 | 19.50 | 20 | 26 | 31 |
| 5. | 8 | 67* | 16.50 | 23 | 32 | 25 |
| 6. | 6 | 36 | 19.50 | 20 | 24 | 33 |
| | | | | | | 157 Total |
| | | m=41.6<br>R=26-67 | | m=24.33<br>R=20-33 | m=30.83<br>R=24-41 | |

*Took placement test previously.

TABLE 3*

Syntactic Acceptability of Spanish Cloze Responses

| | 4 TOT ACCEP | 3 ACCEP In SENT | 2 ACCEP After | 1 ACCEP Prior | 0 Not ACCEP |
|---|---|---|---|---|---|
| Good L1 Readers<br>8 S's<br>68 OR's | 35% | 6% | 6% | 38% | 15% |
| Poor L1 Readers<br>6 S's<br>124 OR's | 50% | 1% | 8% | 31% | 10% |

*See Appendix B for an explanation of code categories.

### TABLE 4*

### Semantic Acceptability of Spanish Cloze Responses

| | 5 TOT ACCEP w/Error | 4 ACCEP In SENT | 3 ACCEP In SENT w/Error | 2 ACCEP After | 1 ACCEP Prior | 0 Not ACCEP | 9 DBT-FUL |
|---|---|---|---|---|---|---|---|
| Good L1 Readers<br>8 S's<br>68 OR's | 41% | 34% | 1% | 4% | 13% | 6% | 0% |
| Poor L1 Readers<br>6 S's<br>124 OR's | 25% | 44% | 3% | 3% | 17% | 6% | 2% |

*See Appendix B for an explanation of code categories.

### TABLE 5

### Syntactic Acceptability of English* Cloze Responses

| | 4 TOT ACCEP | 3 ACCEP In SENT | 2 ACCEP After | 1 ACCEP Prior | 0 Not ACCEP |
|---|---|---|---|---|---|
| Good L1 Readers<br>8 S's<br>129 OR's | 36% | 7% | 18% | 19% | 19% |
| Poor L1 Readers<br>6 S's<br>157 OR's | 36% | 5% | 20% | 19% | 20% |

*See Appendix B for an explanation of code categories.

### TABLE 6

### Semantic Acceptability of English* Cloze Responses

| | 5 TOT ACCEP w/Error | 4 ACCEP In SENT | 3 ACCEP In SENT w/Error | 2 ACCEP After | 1 ACCEP Prior | 0 Not ACCEP | 9 DBT-FUL |
|---|---|---|---|---|---|---|---|
| Good L1 Readers<br>8 S's<br>129 OR's | 22% | 24% | 5% | 12% | 19% | 16% | 2% |
| Poor L1 Readers<br>6 S's<br>157 OR's | 18% | 25% | 5% | 10% | 21% | 19% | 2% |

*See Appendix B for an explanation of code categories.

## TABLE 7

### Subjects for Miscue Analysis

| Subject | Andrade | Baca |
|---|---|---|
| Sex | Male | Male |
| Age | 30 | 19 |
| Nationality | Colombian | Nicaraguan |
| Education | B.S. | H.S. Diploma |
| Placement Test | 48% | 61%* |
| Spanish CLZ | 69/90 | 43/90 |
| (Rank) | (1/74) | (72/74) |
| English CLZ | 29/64 | 22/64 |
| (Rank) | (26/35) | (33/35) |

*Took PLT previously.

## TABLE 8

### Summary Miscue Results

| | Andrade | | Baca | |
|---|---|---|---|---|
| | Spanish | English | Spanish | English |
| MPHW | 2.0 | 5.8 | 4.6 | 6.8 |
| Comprehending | .82 | .52 | .70 | .44 |
| Residual MPHW | .32* | 2.5** | 1.3+ | 3.5++ |
| Comprehension ranking (n=5) | 1.0 | 2.5 | 4.5 | 4.5 |

*Based on 2767 words read +Based on 1213 words read

**Based on 959 words read ++Based on 780 words read

## TABLE 9

### Syntactic Acceptability (SYNAC)

| | Andrade | | Baca | |
|---|---|---|---|---|
| Code | Spanish | English | Spanish | English |
| 0 Not Acceptable | 6% | 12% | 6% | 14% |
| 1 Acceptable with Prior | 32% | 20% | 34% | 18% |
| 2 ACCEP with Following | 10% | 2% | 6% | 10% |
| 3 Acceptable in Sentence | 0 | 2% | 0 | 0 |
| 4 Totally Acceptable | 52% | 54% | 52% | 46% |
| 6 ACCEP in Passage but for other miscues | 0 | 10% | 2% | 12% |

n=50

TABLE 10

Semantic Acceptability (SEMAC)

| | Andrade | | Baca | |
|---|---|---|---|---|
| Code | Spanish | English | Spanish | English |
| 0 Not Acceptable | 4% | 34% | 8% | 38% |
| 1 Acceptable with Prior | 8% | 16% | 8% | 16% |
| 2 ACCEP with Following | 0 | 0 | 0 | 6% |
| 3 Acceptable in Sentence | 6% | 2% | 14% | 2% |
| 4 Totally Acceptable | 42% | 20% | 16% | 26% |
| 5 ACCEP in SENT w/change | 2% | 2% | 6% | 0 |
| 6 ACCEP in PASS w/change | 38% | 26% | 48% | 12% |
| n=50 | | | | |

## FOOTNOTES

[1] I would like to thank Robert Marzano, University of Colorado at Denver, for an insightful critique of an early draft of this paper. I would also like to thank Senaida T. Garcia, UCD, for her efficient secretarial and editorial assistance in the preparation of the paper.

[2] The studies reported here are part of a larger research project (see Clarke 1978) conducted while the author was at the University of Michigan. Special thanks for assistance in that project are due to H. Douglas Brown and John A. Upshur of the English Language Institute.

[3] Percentage of coder agreement on evaluations of syntactic and semantic acceptability using this instrument ranged from 70% to 91%. Average percentages of agreement were as follows: Spanish SYNAC 86%; Spanish SEMAC 70%; English SYNAC 87%; English SEMAC 73%. (See Clarke 1978, 62.)

[4] The Taxonomy presented here is the short form. A more complete version (but one which is missing many codes and coding instructions recently added by Goodman and others) is available in Goodman and Burke (1973, Appendix D). Pat Rigg (personal communication) informs me that a good presentation and explanation of the Taxonomy is available in Allen and Watson (1976). The coding decisions for the English story in this study were verified by Pat Rigg; in the course of working with her, I became aware of the large number of implicit coding and analysis conventions which have developed among miscue researchers, and which have never appeared in print. It strikes me as unlikely that miscue studies can be reliably replicated without the assistance of a researcher who has been in close contact with the Goodmans for a substantial period of time.

[5] Goodman et al. have not addressed the question of coder reliability. The procedures they have established reduce subjectivity somewhat, but researchers working together tend to develop criteria which govern their decisions, yet which are not always explicit in coding manuals. Hood (1975-76) discusses this weakness in miscue research procedures, and offers suggestions for improving the evaluation of texts by independent coders.

[6] This relationship should not be interpreted as proof that accuracy is a prerequisite for effective reading. Goodman and Burke (1973, 32) point out that it is quite likely that the tendency to produce few miscues is a *result*, not a cause of good reading. Martellock (1971) studied one reader whose oral production was flawless, yet he had apparently understood nothing of what he had read.

[7] The striking similarity of the results of this study to the results of previous miscue studies suggests the intriguing possibility that oral reading studies will produce results which exaggerate the "universality" of the reading process. In other words, perhaps oral reading is not an accurate reflection of silent reading. Hood and Gonzalez (1975) discuss the issue at length, pointing out that all oral reading research depends on the assumption that oral reading is equivalent to silent reading, yet little work has been done to confirm the relationship.

# APPENDIX A

## Excerpts from Spanish and English Cloze Test Batteries

### *Meet Don Rogers*

(Adapted from Mellgren and Walker 1973a.)

My name is Don Rogers. I am from Canada. I have one brother and two sisters. We live with our mother and father in Toronto. My brother and I like cars. We work at a gas station after school. We like our work. We like to fix cars. We like to wash the trucks and fill them with gas. We have an old car. We work on it every day. It is a good car, but it needs a lot of work. We ride to school in it every day. Sometimes our sisters ride in it too, but often they ride to school on the bus. I guess they want to be safe.

### *The Life of a Housewife*

(Adapted from Alesi and Pantell 1972.)

Sally Jones is married. She has four children. She is having coffee with her friend Rose. The children are in school. Mr. Jones is at work.

"Life is hard," says Mrs. Jones. "Every day is the same. I wash the dishes and the clothes. I cook food for breakfast, lunch and dinner. I clean the house. Every day is the same. That is the life of a housewife."

"Yes, that is right," says Rose.

They drink their coffee.

Mrs. Jones works in the house every day. She cooks and she cleans. On Mondays, she washes the clothes. On Tuesdays, she irons the clothes. On Wednesdays, she shops for food. Of course every day she has to cook and clean. Even on Saturdays and Sundays she must work. She is always tired. She never has time to rest.

Every morning, she has coffee with her friend, Rose. Rose lives near her. Some mornings, the women have coffee at Sally's house. Other mornings, they have coffee at Rose's house.

After coffee, Mrs. Jones begins her work. First, she washes the dishes and cleans the kitchen. Then she makes the beds and cleans the bedrooms. Soon it is time for lunch. The children come home from school to eat lunch. Mr. Jones eats his lunch at work. After lunch, Sally finishes her housework.

About 4:00 she begins to make dinner. The children come home from school about 4:30. Mr. Jones comes home from work about 5:30. The family has dinner about 6:00. Then Sally does the dishes and gets the children ready for bed.

A housewife's work is never done.

### *My Summer Vacation*

(Adapted from Mellgren and Walker 1973b.)

Last year I went to Guadaloupe for my summer vacation. Guadaloupe is an island in the Caribbean Sea.

The weather is wonderful there. The days are warm and sunny, and the nights are cool and clear. It seldom rains and it never snows. The air is always very clean.

I spent a week in a hotel near the sea. The hotel had a beautiful garden and a large swimming pool. There was a beautiful beach too. It was especially beautiful at sunset.

The hotel food was very good. It was so good that I ate too much during my visit. And all this was not expensive. It cost only fifteen dollars a day.

Every day was full of fun. After eating a big breakfast, I spent the morning swimming and lying in the sun. At 12:00 I usually ate lunch with friends. After eating lunch, I would sleep for an hour. Then I liked to read a book by the swimming pool. Sometimes I played tennis. In the evening everyone dressed for dinner. After dinner we danced until morning.

I have decided to visit Guadaloupe again for my next vacation. I just wrote a letter asking for a room the first week in August. Do you want to come too?

## *Una Carta a Dios*

(Adapted from Lopez y Fuentes 1971.)

La casa--única en todo el valle--estaba en lo alto de un cerro bajo. Desde allí se veían el río y, junto al corral, el campo de maíz maduro con las flores del frijol, promesa indudable de una buena cosecha.

Lo único que necesitaba la tierra era una lluvia, o a lo menos un fuerte aguacero que dejara mojados los campos. Dudar de que llovería habría sido lo mismo que dejar de creer en la experiencia y la sabiduría de los viejos del pueblo.

Durante la mañana, Lencho--que conocía muy bien el campo y creía mucho en las viejas costumbres--no había hecho más que examinar el cielo hacia el nordeste.

--Ahora sí que viene el agua, vieja.

Y la vieja, que preparaba la comida, le respondió:

--Dios lo quiera.

Los muchachos más grandes arrancaban la mala hierba en el campo sembrado, mientras los mas pequenos jugaban cerca de la casa, hasta que la mujer les gritó a todos:--Vengan a comer...

Fue durante la comida cuando, como lo había dicho Lencho, comenzaron a caer grandes gotas de lluvia. Por el nordeste se veían avanzar grandes montañas de nubes. El aire estaba fresco y dulce.

El hombre salió a buscar algo en el corral sólo para darse el gusto de sentir la lluvia en el cuerpo, y al entrar exclamó:

--Estas no son gotas de agua que caen del cielo; son monedas nuevas; las gotas grandes son monedas de diez centavos y las gotas chicas son de cinco.

Y miraba con ojos satisfechos el campo de maíz maduro con las flores del frijol, todo cubierto por la transparente cortina de la lluvia. Pero, de pronto, comenzó a soplar un fuerte viento y con las gotas de agua comenzaron a caer granizos muy grandes. Esos sí que parecían monedas de plata nueva. Los muchachos, exponiéndose a la lluvia, corrían a recoger las perlas heladas.

--Esto sí que está muy malo —exclamaba el hombre. --¡Ojalá que pase pronto!

No pasó pronto. Durante una hora cayó el granizo sobre la casa, la huerta, el monte, el maíz y todo el valle. El campo estaba blanco, como cubierto de sal. Los árboles...

*La Camisa de Margarita*

(Adapted from Palma 1948.)

Las viejas de Lima, cuando quieren protestar al alto precio de un artículo, dicen: "¡Qué! Si esto es más caro que la camisa de Margarita Pareja." Yo tenía curiosidad de saber quien fue esa Margarita cuya camisa era tan famosa, y en un periodico de Lima encontré un articulo que cuenta la historia que van ustedes a leer.

Margarita Pareja tenía, en 1765, diez y ocho años y era la hija favorita de don Raimundo Pareja, colector Callao. La muchacha era una de esas limeñitas que por su belleza cautivan al mismo diablo. Tenía un par de ojos negros que eran como dos torpedos cargados con dinamita y que hacían explosión en el corazón de todos los jovenes de Lima.

Llegó por entonces de España un arrogante joven, hijo de Madrid, llamado don Luis Alcazar, que tenía en Lima un tío solterón, muy rico y todavía más orgulloso. Por supuesto que, mientras le llegaba la ocasión de heredar al tío, vivía nuestro don Luis tan pobre como una rata.

En una procesión conoció Alcazar a la linda Margarita. La muchacha le llenó el ojo y le flechó el corazón. El le echó flores, y aunque ella no le contestó ni sí ni no, le dijo con sonrisas y demás armas del arsenal femenino que le gustaba. Y la verdad es que se enamoraron locamente.

Como los amantes olvidan que existe la aritmética, creyó don Luis que para casarse con Margarita su presente pobreza no sería obstáculo, y fue al padre y sin vacilar le pidió la mano de su hija. A don Raimundo no le gustó mucho la idea y despidió al joven, diciéndole que Margarita ere aún muy joven para tener marido, pues a pesar de sus diez y ocho años todavía jugaba a las muñecas.

Pero no era ésta la verdadera razón, sino que don Raimundo no quería ser suegro de un pobre, y así lo decía en confianza a sus amigos, uno de...

## APPENDIX B

### Code Categories for Cloze Analysis

(See Clarke and Burdell 1977 for a detailed explanation of this instrument.)

Syntactic Acceptability (SYNAC) (exact responses appear in parentheses)

4: totally acceptable

I stayed a week in a hotel by the sea.
(spent)
Esto sí que está muy feo.
(malo)

3: acceptable in the sentence; the response satisfies sentence level syntactic constraints, but violates discourse constraints:

After eating lunch I usually sleep for an hour.
(would)
(The passage requires the past tense.)
Consentó en que le regale la camisa de novia...
(Consiento)
(The passage requires the present tense.)

2: acceptable only with the following portion of the sentence; from the response on, the sentence is syntactically acceptable:

The hotel food were very good.
(was)
Los muchachos..., corrían a por las perlas...
(recoger)

1: acceptable only with the preceding portion of the sentence; the sentence is syntactically acceptable up to and including the response:

Sometimes our sister ride in it too.
(sisters)
El que salió a buscar algo en el corral...
(hombre)

0: totally unacceptable:

It (the food) was so good that I fat too much...
(ate)
Fue durante la comida cuando, como lo había dicho llovía, comenzaron a caer grandes gotas de agua.
(Lencho)

Semantic Acceptability (SEMAC) (exact responses appear in parentheses)

6: totally acceptable:

I just wrote a hotel asking for a room in August.
(letter)
Esos sí que parecían monedas de acuñación nueva.
(plata)

5: totally acceptable if syntactic constraints are ignored; the sentence and/or response requires minor syntactic changes:

Sometimes our sister ride in it, too.
(sisters)
Esos sí que parecían monedas de oro nueva.
(plata)

4: acceptable in the sentence; the response violates some passage-level meaning constraints:

And all this was very expensive.
(not)
Por supuesto que, mientras le llegaba la ocasión de heredar al
padre vivía...tan pobre como una rata.
(tío)

3: acceptable in the sentence if syntactic constraints are ignored; the sentence and/or the response requires minor syntactic changes to become acceptable at the sentence level:

Even on Saturdays and Sundays she don't work.
(must)
Y la verdad es que se puso locamente.
(enamoraron)

2: acceptable only with the following portion of the sentence; from the response on, the sentence is semantically acceptable:

At 12:00 I usually ate speak with friends.
(lunch)
Pero, de pronto, comenzó a soplar un fuerte viento y con las gotas de
agua comenzaron a caer gotas muy grandes.
(granizos)

1: acceptable only with the preceding portion of the sentence; the sentence is semantically acceptable up to and including the response:

After eating there big breakfast, I went swimming.
(a)
Dios,...escribió--si no me ayudas, el hambre con toda mi
familia...
(pasaré)

0: totally unacceptable

The weather is wonderful blue.
(there)
Y la verdad es que se Ø locamente.
(enamoraron)

9: indeterminate: the response seems to fit the context, but it is impossible to determine the contextual motivation for it:

It (the food) was so good that I fat too much...
(ate)
A quien muchacha le llenó el ojo, y le flechó corazón.
(La)

## APPENDIX C

## Excerpts from Oral Miscue Reading Selections

### *Meditación del Saludo por Ortega y Gasset*

(Ortega y Gasset 1957.)

Nuestro viaje hacia el descubrimiento de que es en verdad la sociedad y lo social ha hecho crisis.

Recuérdese que nuestra trayectoria partío de la desconfianza que nos han inspirado los sociólogos porque ninguno de ellos se había detenido con la exigible morosidad a analizar los fenómenos de sociedad más elementales. Por otra parte, en nuestro derredor - libros, Prensa, conversaciones - hallamos que se habla con la más ejemplar irresponabilidad de nación, pueblo, Estado, ley, derecho, justicia social, etc., etc., sin que los habladores posean la menor noción prescisa sobre nada de ello. En vista de lo cual queríamos averiguar, por nuestra cuenta, la posible verdad sobre esas realidades, y a este fin nos pareció obligado ponernos delante las cosas mismas a que esos vocablos aluden, huyendo de todo lo que fuera ideas o interpretaciones de esas cosas, elaboradas por otros. Queremos recurrir de todas las ideas recibidas a las realidades mismas. Por eso tuvimos que retirarnos a aquella realidad que es la radical, precisamente en el sentido de que en ella tienen que aparecer, anunciarse o denunciarse todas las demás. Esa realidad radical es nuestra vida, la de cada cual.

En nuestra vida ha de manifestarse cuanto para nosotros pueda pretender ser realidad. El ámbito en que las realidades se manifiestan es lo que llamamos Mundo, nuestro mundo primordial, aquel en que cada cual vive y que, en consecuencia, es vivido por él y, al ser por el vivido, le es patente y sin misterio. Esto nos llevó a hacer un inventario de lo que en ese mundo hay, inventario enfocado al descubrimiento de realidades, cosas, hechos...

### *Cold Cash*

(Hoke 1965.)

At four thirty-five on Friday afternoon, Alvin Pimley put his pencils away, took his hat from the rack, and drove to the bank. He parked outside and then went in. While he waited in line at the window, his thoughts drifted to the delicious question of what to have for dinner that night.

Suddenly, panic broke loose in the bank lobby. Someone screamed, and a man yelled, "The bank's been held up!" The fat woman in front of Alvin fainted. The alarm rang and somewhere outside there was a shot.

A bank clerk said, "He got ten thousand!" and Alvin, to his surprise, found himself admiring the thief's courage. "What I couldn't do with ten thousand dollars!" he thought.

A few minutes later the police came into the bank, dragging a young man with them.

"He's the one, I'd know him anywhere," the teller said.

"But he doesn't have a cent on him!" announced a puffing officer.

"He must have a helper," the teller suggested. In spite of loud complaints, everyone in the bank was searched. Nothing was found.

When Alvin was at last free to go, his thoughts returned to his dinner. He quickly drove...

## APPENDIX D

### Code Categories for Oral Reading Miscue Analysis

(See Goodman and Burke 1973 for a detailed explanation of this instrument.)

1. Correction: Did the reader repeat material in an apparent effort to correct a miscue? Was he successful?
2. Dialect: Was dialect involved in the miscue? Does the miscue demonstrate first or second language influence? Is there evidence that the miscue is a result of inter-language phenomena? (Only miscues which involve morphological or syntactic changes are coded in this category.)
3. Graphic Proximity: Graphically, how similar was the miscue to the expected response? (To make this judgment, the researcher must render the miscue according to the conventions of English or Spanish orthography, then compare the OR and ER to arrive at a decision which can range from 0--no similarity, to 9--homograph.)
4. Phonemic Proximity: Phonemically, how similar was the miscue to the expected response? (The same scale--0 to 9--is used here as in category 3, above.)
5. Allolog: Is the miscue an allolog of the expected response? (Allologs are alternative forms of the same word. Examples include can't for cannot, that's for that is, plane for airplane.)
6. Syntactic Acceptability: Syntactically, how acceptable was the miscue? (The codes, which range from totally acceptable through acceptable only with parts of the sentence, to totally unacceptable, represent an attempt to grade each miscue according to "degree of syntactic acceptability." Such a ranking of responses permits researchers to characterize the "quality" of a subject's hypotheses concerning the syntax of the structure he is reading.)
7. Semantic Acceptability: Semantically, how acceptable was the miscue? (The codes, which are basically the same as those in category 6, permit researchers to characterize the "quality" of a subject's hypotheses concerning the meaning of the text.)
8. Syntactic Change: Syntactically, how much change resulted from the miscue? (When a miscue produces a sentence which is syntactically acceptable, the degree of change between the ER and OR is measured. This category is coded using a scale of 0 through 9, indicating increasing similarity.)
9. Semantic Change: Semantically, how much change resulted from the miscue? (Just as with category 8, this category is not coded unless the miscue is semantically acceptable. The code values also range from 0 to 9.)
10. Intonation: Is intonation involved in the miscue? (Intonation changes are involved in almost all miscues. This category is used only when intonation signals a morphological or syntactic change.)
11. Bound and Combined Morphemes: Did the miscue involve inflectional, derivational, or contractional morphemes? Did it involve the stem? (Each miscue involving bound and combined morphemes is coded for substitution, insertion, omission, or reversal of morphemes.)
12. Word and Free Morpheme: Did the miscue involve the substitution, insertion, omission, or reversal of a free morpheme or word?
13. Grammatical Category and Surface Structure: To what structural category does the miscue belong (noun, verb, noun-modifier, verb-modifier, function word)? What is its form (i.e., common noun, verb in passive, noun-derived adjective, etc.)? What is its function in the sentence (i.e., subject, main verb, object, etc.)? (This category is used only when the miscue does not have the same grammatical function and form as the expected response. This allows the researcher to describe the degree to which a subject tends to substitute words which have the same grammatical form and function as the expected response.)

# An Exploratory Study of Bilingual Reading Proficiency

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## INTRODUCTION

Developing an adequate measure of degree of bilingualism has long been a problem for testers and educators alike. Osgood and Ervin (1954) discuss methods of measuring degrees of coordinate bilingualism, and Jakobovits (1970) describes no less than 27 methods for assessing various aspects of bilingualism. In many countries, problems of bilingualism in education have lent an urgency to the need for an acceptable measure. Particularly in such countries as the United States and Canada, social, political, and legal factors have drawn attention to this urgency. Interest has quite naturally centered on bilingual asessment in children entering school, and therefore on oral testing. (See Holloman, 1977 and Burt and Dulay, 1978, for examples.)

The purpose of the present research is to work toward the development of a testing procedure for measuring the degree of bilingualism in reading among older subjects. It involves the use of clozentropy, a variation on the well-known cloze procedure, as it can be demonstrated that clozentropy, applied to the assessment of degree of bilingualism, fulfills conditions specified for such measurement by such researchers as Jakobovits and Burt and Dulay. Jakobovits (1970) suggests that such a measure should take account not only of a subject's control of his two languages, but also of the amount of interference caused by the fact of bilingualism itself (not only in the $L_2$ but also in the $L_1$). In other words, what is needed is a measure which compares a bilingual individual's proficiency in each of his languages with that of monolinguals in each language.

Burt and Dulay (1978) suggest the use of measures of syntax (broadly interpreted) in "structured natural communication" as tests of degree of bilingualism. They also identify six "checkpoints" for evaluating proficiency and dominance tests: (1) the parts of a language dominance test that assess each language must not be mere translations of each other; (2) the content of a language measure must not be outside the student's experience or cultural customs and values; (3) the responses required by test items must not violate conventions of natural discourse; (4) a distinction must be made between the quantity and the quality of the student's responses; (5) age and grade norms cannot be used alone in interpreting bilingual test scores; (6) psychometric requirements must be met. The Burt and Dulay checklist refers to oral dominance testing, of course, but the guidelines are applicable to all areas of bilingual/bidialectal measurement. In the discussion section of this article, it will be shown that a clozentropy measure of degree of bilingualism can satisfy the requirements suggested by both Jakobovits and Burt and Dulay.

## CLOZENTROPY PROCEDURE

That the cloze format might be a suitable vehicle for bilingual measurement has been considered for many years. Osgood and Ervin first proposed the possibility: "Passages in languages A and B, as translated by maximally facile coordinate translators, could be mutilated (every fifth word deleted, for example) and given to subjects with varying degrees of bilingualism...the more nearly correct the 'fill-in' scores for languages A and B, the more truly bilingual in the coordinate sense the subject..."(1954:146). In research with cloze procedure as a measure of foreign language proficiency, Carroll et al. (1959) used the procedure outlined by Osgood and Ervin. They tested English-German and English-French bilinguals using translated cloze tests and found that the passages used failed to retain their relative difficulty when translated into another language--even by "maximally facile" translators. Thus, Osgood and Ervin's procedure would seem to be oversimplistic. [Incidentally, it also doesn't make sense to give two cloze passages, one a translation of the other, to a bilingual subject, since reading the passage in one language would help him to score higher in the second; this has been shown to be the case in an experiment with Japanese-English bilinguals (Douglas and Yamada, 1978)]. Nevertheless, Carroll and his colleagues did demonstrate that the cloze procedure could distinguish between the first and second languages of the bilinguals they tested, even though many of the bilinguals in the sample had native or near-native proficiency in the second language (1959:29). This finding that cloze tests discriminate effectively between first- and second-language speakers has been demonstrated many times since (e.g., Oller and Conrad, 1971; Darnell, 1968), and cloze tests are clearly measures of reading proficiency in both the first and second languages.

Carroll et al. also report finding what has been termed a "cloze factor" --an ability to perform the cloze task unrelated to language proficiency. This was indicated in their study by "substantial correlations" between cloze scores in the first and second languages (1959:52) and is taken by them as a serious shortcoming in cloze procedure when used to measure proficiency in a second language. However, their data is based upon a small number of bilinguals (15 French-English and 12 German-English), and their correlations are inconsistent (.50 for the French-English sample and .06 for the German-English sample). Subsequent research has found no "substantial" correlations. [Douglas (1976) found a correlation of .36 between English and Setswana cloze scores; Douglas (1977) found a correlation of .02 between English and Arabic cloze scores.]

An interesting development in the experimentation with cloze procedure in the measurement of both native and foreign language reading proficiency is the use of a scoring procedure known as clozentropy. This term, first used by Darnell (1968), refers to the application of information theory to the scoring of cloze tests. It has been described in detail elsewhere (e.g., Darnell, 1968, 1970; McLeod and Anderson, 1970; Douglas, 1976; and Enkvist and Kohonen, 1978) and was first applied to the analysis of cloze data by Taylor (1954). Briefly, clozentropy involves taking account of all responses to a cloze test provided by a criterion group of subjects, weighting each response according to the probability of its occurrence, then scoring the performance of the test group on this basis. Thus, a test subject who gives responses similar to those of a majority of the criterion group will receive a high score, while one whose responses vary from those of the criterion group will receive a lower score, depending upon how great the deviation is.

The benefits of this system in language proficiency testing, or more to the point here, reading proficiency testing, are obvious. The selection of the criterion group is crucial, for it is the language habits of this group against which those of the test group are to be interpreted. The criterion group may be composed of fluent native speakers of the target language (cf. McLeod, 1975); it may be made up of the educational or developmental peers of the test group (cf. Darnell, 1968; Douglas, 1976); indeed, the criterion group and the test group may be the same (e.g., Darnell, 1968), in which case subjects' scores represent their linguistic "fit" with the other members of their group.

The concept of assessing language proficiency by relating individuals' test responses to a criterion established by a group of which they are members or potential members is intuitively appealing, for we can thus compare, if we like, the proficiency levels of minority pupils with those of a majority group. We can also compare minority children's performances in their second language or dialect with their performances in their first language or dialect, which itself may be compared with those of their own peers. It can be argued that individuals' idiolectal or dialectal differences should not penalize them in the assessment of their proficiency; that because they would fill in a cloze item "_____ very nice" with she instead of she's, they would receive a lower score. The selection of the criterion group that the subjects are to be scored against is seen to be very important here. The criterion may be the language habits of middle class Anglo-American school children; it may be those of a random sample of American school children; it may be those of a sample of black American school children. The clozentropy scoring method is very flexible in this regard, and this feature should be taken advantage of in bilingual reading measures.

As for the size of the criterion group, McLeod and Anderson (1970) found that a group of 25-30 was sufficiently large to ensure stability and consistency. They found that the correlations between tests of 57 eighth-grade pupils scored using a clozentropy criterion group of 50 Australian student teachers and the same test scored using groups of 15, 25, and 35 Canadian university students were .97, .98, and .99 respectively. Thus, in the preparation of a test of bilingual reading proficiency, researchers need not try for excessively large numbers of subjects for their criterion group, which enhances greatly the convenience of the clozentropy technique.

## CLOZENTROPY AND BILINGUAL READING PROFICIENCY

The present experiment is one investigating further the use of clozentropy in the measurement of bilingual reading proficiency. It follows suggestions made by McLeod (1975) as a result of his experiments with cloze tests in different languages. He and his colleagues worked with tests in English, French, German, Czech, and Polish. The material consisted of six passages in each language--two originally written in English, two in French, and two in German. They were translated into each of the other two languages, then all six were translated into Czech and Polish. Thirty to 50 primary school children were tested in each country (Canada, France, West Germany, Czechoslovakia, and Poland). The criterion groups were fluent native-speaker readers at senior secondary or university levels.

McLeod calculated a "Relative Uncertainty Reduction Index" for each subject by dividing the score made on the test by the highest possible score (assuming maximum uncertainty reduction), and a "redundancy index" for each language by dividing the average observed item redundancies for the test by the maximum possible redundancy (assuming complete agreement on each item by the criterion group). What is being measured here is the subject's uncertainty reduction owing to utilization of the redundancy available in the passage. This is, of course, "reading comprehension" as defined by, for example, Smith (1971:185). In clozentropy, the redundancy of the passage is estimated by the performance of the criterion group, and individuals' utilization of this available redundancy is represented by their clozentropy scores. McLeod also found that redundancy across languages seemed to be constant (75% to 90%). This finding led him to question the necessity for using parallel translations, a laborious and questionable procedure. Douglas (1976), working with clozentropy in English and Setswana, using independent rather than parallel passages, also found comparable redundancy (74% for English and 75%

for Setswana), apparently confirming McLeod's suggestion. (As it turns out, this was an unwarranted conclusion, but as it formed the basis for the present experiment, it needed to be explained. More will be said on the subject of redundancy across languages in the discussion section.)

McLeod also suggested that an individual's "bilinguality index" could be calculated by dividing the difference between his performances in each language by the sum of his performances (LgA=LgB/LgA + LgB). Thus, the bilinguality index would range between minus one and plus one. If language A were a subject's first language and B the second, a positive bilinguality score would indicate dominance in the first language; the closer to plus one, the greater the dominance. Similarly, a negative score would indicate dominance in the second language, while a score of or near zero would indicate perfect or balanced bilingualism.

This procedure was employed experimentally on the English-Setswana data from Douglas (1976). The bilingual subjects were senior secondary school pupils in Botswana, and the English criterion group were Scottish secondary pupils of a comparable educational level. It was found, for example, that a subject who had scored well in Setswana ($L_1$), but who had scored poorly in English ($L_2$), had a bilinguality index of .47; another subject who had scored well on both tests had an index of .15. The average bilinguality index for the group of 435 was .21. This average result suggests that the first language of the subjects was dominant, but that their English reading ability was pretty good in comparison. The bilingual index must be interpreted in light of both the average performance of the group and the individual's own performance in each language. For example, a subject who had scored low on both tests might have a bilinguality index of .05, suggesting almost perfect bilinguality, but the low test scores would remind us that this subject is not a very proficient reader in either language.

The present experiment was carried out to further test the concept of the index of bilinguality as produced by the clozentropy technique. In particular, further confirmation was sought that independent passages would yield comparable degrees of redundancy (a necessary condition if meaningful comparisons across languages are to be made). Further, the experiment included the construction of a cloze test in Japanese, and problems inherent in this were explored. The relationship of the standard exact-word scoring to the clozentropy method was investigated, the relationship between cloze performance in the first and second languages was once again examined, and finally, the types of responses given on the English test by the native speakers of English were compared with those of the Japanese subjects.

## METHODOLOGY OF THE STUDY

### *Subjects*

Thirty-four native speakers of Japanese and 31 native speakers of American English were tested. All subjects were university students or graduates, the majority being student teachers of English as a second or foreign language. All the Japanese subjects were third-year students in the Department of Curriculum Studies (English Language Teaching) in the Faculty of Education at Hiroshima University. The English native speakers group was made up of 19 students at the University of Hawaii and 12 residents of Hiroshima. Thus, while the English native speakers were a more heterogeneous group than were the Japanese speakers, both groups may be said to be at the upper range of ability.

### *Materials*

Two 50-item cloze tests were prepared, one in English and one in Japanese.

The English passage was from a published essay entitled "Other Threats than Military: Redefining National Security." Every seventh word was deleted from the extract. The Japanese was also from a published essay, entitled *Sotsugyoo-shiki* 'Graduation Ceremony.' Since the construction of cloze tests in Japanese is not a common procedure, and admits of some technical problems, a short discussion of the procedure followed here is necessary.

Written Japanese employs two types of script: *kanji*, adapted to the Japanese language long ago from Chinese characters, and *hiragana*, a syllabary. (A third system, *katakana*, may also be used for writing words of foreign origin.) Further, the language itself may be segmented in two ways: by *bunsetsu* 'meaning groups' or by *tango* 'words.' For example, in the phrase *Koshi ni natte niju nen ni naru ga*... 'Although twenty years have passed since I became a teacher...,' the divisions shown are *tango*. *Koshi* 'teacher' would be written with two *kanji*, *niju* 'twenty' would be written with the *kanji* for two and zero, and *nen* 'years' would be written with a single *kanji*. The rest of the "words" would be written in *hiragana*. Divided into *bunsetsu*, the segments would be *Koshini natte nijunenni naru ga*.

There is often disagreement about the segmentation into *bunsetsu* and *tango*. For a cloze test, use of the first of these alternatives results in items which carry a large semantic load in comparison with English cloze items, and the passage itself must be quite long to produce 50 such items. It was therefore decided to use the second alternative in the present project and segment by *tango*. This follows the precedent set by the only other application of cloze procedure to a Japanese text (Shiba, 1957) known to the present investigator. [Briere et al. (1978) used the cloze procedure with Japanese, but transcribed the text into the Latin alphabet; though they do not say so, it would appear from their description that they used the *bunsetsu* segmentation (1978:25).] Three native speakers of Japanese in the Faculty of Education of Hiroshima University segmented the passage into *tango*, and disagreements were resolved. Then every seventh *go* (word) was deleted to produce the 50-item test. The resulting test was piloted on a group of graduate students in the Faculty of Education, and minor adjustments were made in the final form.*

### *Procedure*

The English test was administered to the Hawaii group by a colleague, while the investigator administered it and the Japanese test to the subjects in Hiroshima. No time limit was set, and subjects were encouraged to respond to all items. The Japanese subjects were given both tests at one time, half doing the English one first, half doing the Japanese first.

### *Scoring*

A two-stage scoring procedure was used with each set of tests. First they were scored by the standard cloze exact-word method, counting as correct only those responses identical to the deleted item. The second stage involved the use of the responses of the best-scoring subjects for a clozentropy scoring procedure. The intention was to use only those subjects who had scored above 40% for the clozentropy criterion groups, and this proved possible with the Japanese subjects--26 subjects scored above 40%. However, the English test proved to be much more difficult for the English native speakers than the Japanese test was for the Japanese native speakers, and only a small number scored above 40%. It was thus decided to take the top 26 papers for the

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*Thanks are due to Mr. Jun Yamada of the Faculty of Education, Hiroshima University, for his great help and advice in the preparation of the Japanese cloze test.

English clozentropy analysis. Thus, although the criterion of 40% restoration was not met with the English sample, the fact is that all the subjects may be regarded as skillful readers, and their range of responses considered representative of the larger population of readers (the lowest score in the English criterion group was 30%).

The clozentropy formula used in scoring was $T=\Sigma \log n$, where the total score (T) of each subject was the sum ($\Sigma$) of the logarithms of the number of subjects in the criterion group who gave the same response ($\log n$). This formula is one devised by Reilly (1971) as a simplification of that used by Darnell (1968). (See Douglas, 1978 for a description of the details of its use.) The formula used for determining the redundancy of the passages was

$$R= \frac{\Sigma \log n}{Nm\log N}$$

where redundancy (R) is the sum of all the logarithms of the number of the number of subjects (n) in the criterion group producing each response, divided by the total number of subjects (N) times the number of items in the test (m) times the logarithm of the number of subjects ($\log N$). This formula is an adaptation of one devised by McLeod and Anderson (1970). Finally, the formula for determining the index of bilinguality is

$$B= \frac{L_1-L_2}{L_1+L_2}$$

where bilinguality (B) is the difference between the subject's performance on the tests in each language ($L_1-L_2$) divided by the sum of his two performances ($L_1+L_2$). This formula is an adaptation of one suggested by McLeod (1975).

## RESULTS

The means, standard deviations, and reliability coefficients for the English and Japanese tests for both groups of subjects are shown in Tables 1 and 2 below.

TABLE 1

Results of Reading Tests in English for English Native Speakers (n=31)

| Mean | Standard Deviation (SD) | Reliability (KR-21)* |
|---|---|---|
| 38.2 (70.3%) | 6.2 | .72 |

*Kuder-Richardson Reliability Formula

TABLE 2

Results of Reading Tests in English and Japanese for Japanese Native Speakers (n=34)

| | Mean | SD | Reliability (KR-21) |
|---|---|---|---|
| English Test | 21.9 (40.3%) | 4.1 | .23 |
| Japanese Test | 52.9 (84.2%) | 4.8 | .65 |

Note that the mean score of the English native speakers is much lower than that of the Japanese subjects on the Japanese test, suggesting that the English test was more difficult. This is borne out by the very low reliability of the Japanese subjects' scores on the English test, an indication that it was far too difficult for them and that they were doing a lot of guessing and/or leaving items blank. The percentages given in parentheses indicate the percentage of the highest possible score achieved by each group. This maximum score is calculated by summing the scoring weights of the most popular responses over the 50 items. No subject actually achieved this ideal score (54.3 in English and 62.8 in Japanese), although a few came close (one subject scored 93.8% on the Japanese test).

The redundancy of the English passage for the American subjects was .54, while for the Japanese subjects it was .31. The redundancy of the Japanese passage for the native Japanese speakers was, however, .75. This result suggests that the passages are not equally redundant, and is related to the indication above that they are not of equal difficulty. The implications of this finding will be discussed below.

When scores on exact-word replacements and the clozentropy procedure were correlated, high correlations resulted. For the Japanese subjects taking the Japanese test, the correlation was .86. On the English test, the Japanese speakers' scores correlated at .83, while the native English speakers' results showed a .84 correlation. All correlations were significant at the .01 level. This result suggests that there is a high degree of correlation between the two scoring systems, in both languages and for both native speakers and foreign speakers.

The correlation between the English and Japanese test results for the Japanese subjects was .07, which is more evidence against the existence of a strong cloze factor.

The average bilinguality index for the Japanese subjects was .42. However, since the English test was less redundant than the Japanese test, this comparison is biased in favor of Japanese and is an underestimate of the subjects' relative proficiency in English. The correlation between degree of bilingualism and the Japanese score was .38 ($p<.05$), while that between bilingualism and the English score was -.89 ($p<.01$). This suggests that both tests were contributing significantly to the measure of bilingualism, with the English test contributing much more heavily than the Japanese (the negative correlation occurs because the higher the English score, the closer to zero the bilingual index).

## DISCUSSION

It is clear that redundancy, as measured by specific groups of readers' responses to specific cloze tests, is not constant across languages. The result achieved here is at variance with that of Douglas (1976), where it did seem that independent passages in different languages would produce equivalent redundancy ratings estimated from the cloze responses of native speakers. In the present experiment, the English passage was much more difficult than the Japanese passage. In Douglas (1976), the passages were of comparable difficulty. Surely, here lies the crucial distinction. McLeod (personal communication) suggests that this is the case: "I suspect that my pilot study in Europe [McLeod 1975]...happened to use passages in the different languages that were of approximately the same readability level. But when this condition is not satisfied, one runs into trouble." It was certainly true that in Douglas (1976) the passages used "happened" to be of the same readability level; in the present case, the two passages "happen" not to be. In research subsequent to his 1975 work, McLeod (1977) reports "...it is clear that not only do independent passages yield different [redundancies] in different languages, but they also yield different [redundancies] within the same language." He points to some previous research (McLeod and Anderson, 1966) which showed that while the relationship of the redundancy of passages of varying difficulty to that of a standardized cloze reading test, as estimated by the performance of a group of primary school pupils, was linear, the *slope* of the correlations was different for each text, corresponding to the difficulty level of the text. This is more evidence that an important factor in comparing texts across languages is the level of readability of the texts.

It seems clear from all this evidence (as indeed it should have been on theoretical grounds alone) that a redundancy estimate is always a function of both text and reader factors. A text which is easy for one reader may be difficult for another; similarly, a difficult text may be simplified. Thus, the redundancies of independent passages in two languages, as estimated from the responses of groups of native speakers of each language, are very likely to be different. However, if the two referent groups are selected so as to be as similar in educational and intellectual level as possible, and if the texts are chosen so as to be as similar in difficulty as possible, the chance of producing comparable redundancies is greatly increased. In this case, the performances of one group on both texts will represent its relative proficiency, or degree of bilingualism. If the estimated redundancies are not comparable, the result will be a biased measure of proficiency in the second language. It should not matter what the redundancy estimates are in the two languages, so long as they are equivalent. Much research remains to be done before this theory is proven, however.

Looking at the reading tests themselves, it would seem that with both the English and the Japanese tests, reliability is a bit low to allow for the measurement of individual differences among the subjects (for this, a reliability of .9+ is necessary). In the case of the English test, this low reliability is most likely due to its extreme difficulty, both for the native speakers and the Japanese subjects. The item analysis (an advantage of the clozentropy scoring is that it produces ready-made item analysis) shows that only nine items received maximum scoring weight, i.e. were unambiguous, or maximally redundant, compared with 19 such items on the Japanese test. In fact, the Japanese test was somewhat too easy, and about 23 of the items failed to discriminate well, although it should be remembered that a group of fluent native speakers at the university level would show little variance and therefore rather low reliability estimates. The Japanese passage may well be at an appropriate readability level (75% redundancy), and by lengthening the text and increasing the number of items, the reliability would become more acceptable. In any case, the decision to use tango as the basic cloze unit would seem to have been justified, for adding more such items would not lengthen the test inordinately. However, much more experience with Japanese cloze tests is necessary before any firm statements can be made.

The rather strong correlations between the standard exact-word scoring method and the clozentropy method are of interest. McLeod and Anderson (1970) report similarly strong correlations. In all cases the criterion groups used in the clozentropy analyses were fluent readers; so, presumably, were the authors of the passages. Thus, it is not surprising that there would be a high correlation between scores based on the author's original words (the exact-word method) and those based on fluent readers' judgments (clozentropy). The advantages of clozentropy are that it allows a more direct measurement of redundancy, it produces more reliable results (since discrimination is greater), and it allows for varying criterion groups to be used.

Both scoring systems discriminated fairly well in English. The rank-orders of all 65 subjects show that, with either system, the bottom half of the ranking is occupied by the Japanese subjects while the top half is held by the American subjects (there is an overlap of two or three subjects in the middle ranks). Thus, the cloze tests effectively discriminate between the native and non-native readers; no non-native reader scored anywhere near the native speaker mean.

Finally, a short discussion of an interesting difference between the responses of the first and second language subjects suggests some interesting further research. Cloze tests have long been indicted for measuring subjects' response to "local redundancy" while ignoring longer range redundancy (e.g., Carroll, 1972). If this charge is true, cloze tests would be measures more of awareness of "transitional probability" of the type "John _____ the ball with the bat" than a test of what we normally think of as "reading comprehension" --the awareness and utilization of syntactic, phonological, semantic, and pragmatic rules in the interpretation of texts. For example, in the phrase "...the annual budget of the United _____...," attention to local redundancy makes *States* the most probable response. However, a reading of the following clause "...and its specialized agencies," greatly reduces this probability and makes *Nations* a distinctly more likely alternative.

It may be suggested that reliance on local redundancy, ignoring longer range redundancy (the source of which lies outside the clause containing the cloze item), might be a major difference in the reading habits between native and non-native speakers of the language being tested. To examine this possibility, 19 items on the present English test which depend (in the researcher's admittedly subjective opinion) upon long-range redundancy for their completion were isolated and rescored for both the American and the Japanese subjects. A very broad interpretation of correctness was used in this analysis, and if a response was within the semantic field of the originally deleted word, it was counted correct. The American subjects averaged 3.3 errors on the 19 items, while the Japanese subjects averaged 12 errors. This is a difference of 72% compared with a difference of 43% on the whole test. Thus, it can be suggested that a major difference between native and non-native readers lies in the utilization of extra-clausal information in the comprehension of texts. The second language readers would seem to be focusing too closely on the sequential print data and not making enough use of information which is available from many sources throughout the passage (cf. Smith, 1971:191ff). More investigation of this possibility is certainly necessary.

## CONCLUSIONS AND RECOMMENDATIONS

In the introduction to this article, it was suggested that the clozentropy technique could usefully be applied to the problem of the measurement of degree of bilingualism in reading and that it satisfied guidelines such as those suggested by Jakobovits and Burt and Dulay. The clozentropy test allows a direct comparison of a subject's reading performance in two languages with that of criterion groups in each. The criterion groups may be fluent monolinguals (as Jakobovits suggests) or groups selected on any other reasonable grounds. An interesting question implied by Jakobovits (1970:170), and which could be investigated through further research with clozentropy, is whether the $L_1$ language habits of bilinguals are different from those of monolinguals (what Jakobovits refers to as "backlash interference"). Regarding the suggestions of Burt and Dulay (1978) for bilingual measures: (1) the clozentropy procedure avoids problems of translation in arriving at equivalent tests across languages, (2) the content and level of the tests can be varied according to the subjects' own experience and culture, (3) the responses required of the subjects correspond to conventions of natural discourse, as set up by the criterion groups, (4) the quality of the responses is determined by comparison with the criterion groups' and is far from unconstrained, (5) the meaningfulness of the bilingual rating is derived from norms established by the criterion groups which represent the target communities, and, finally, (6) the validity, reliability, and sampling requirements can be met through proper piloting and field testing.

Further research with the clozentropy technique must focus on the thorny problem of the difficulty levels of the two test passages, for equality of redundancy is crucial to the comparison of results across languages. One method for selecting passages might be as follows:

- Select a suitable passage in language A.
- Select two or three passages in language B deemed to be of approximately equivalent difficulty to passage A by bilingual judges (half of whose first language is A, half of whose first language is B).
- Give a clozentropy test based on passage A to native speakers of A (the criterion group), and ones based on the B passages to the B criterion group.
- Calculate the redundancies of all passages and choose the passage in B which matches the redundancy of passage A.

The result would be two independent passages which were of equal redundancy levels for their respective criterion groups. Admittedly, the procedure is a bit like navigating an X-15 by the seat of one's pants, but at our present state of knowledge, it may be the best way. By filtering the B passages first through the panel of judges to get two or three estimated to be of comparable difficulty to passage A, the chances of actually having one of them match A for redundancy are greatly increased.

Once the technique for producing the bilingual measure has been refined, experiments can proceed on the very interesting questions surrounding bilinguality itself, especially on the nature of the relationship of the bilingual's two languages to each other, of his language habits to those of monolinguals, and of native speaker to non-native speaker utilization of redundancy. The clozentropy technique is potentially of very great value in this area.

# Developmental Patterns in Native and Non-Native Reading Acquisition

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## INTRODUCTION

In her *Longitudinal Study of Children's Oral Reading Behavior* (1971), Yetta Goodman reported the results of her two-year observation of four young readers learning to read in their native language--English. Using the *Reading Miscue Inventory* Analysis (full Taxonomy) developed by Kenneth Goodman and others, she traced the changes in oral errors--miscues--made by these readers as they moved towards greater reading proficiency. Goodman determined that there were a number of developmental changes, reflected in the miscues, which accompanied increased reading proficiency for these young readers; as they became more proficient, they demonstrated changes not only in the overall frequency of oral miscues, but, more significantly, in the type of miscue with respect to meaning.

The present study focuses on an important question raised by the Goodman research: are these developmental patterns perhaps a general feature of learning to read? More specifically, will adults learning to read in a foreign language evidence patterns of development, as seen through their miscues, similar to those observed in children learning to read in that same language? The presence of similar developmental patterns would indicate, at least to some extent, an important relationship between native and non-native reading acquisition and between first and second language reading acquisition.

## STUDY METHODOLOGY

A cross-sectional investigation of 14 adults learning to read English as a foreign language (Mexicans learning English), the study is based on teacher evaluation of their reading. The readers were grouped low, medium, or high to represent the proficiency levels that the young readers would pass through as they moved from low to high proficiency. The groups, then, can be seen as the level, low, medium, or high, for any one of the young readers at different times in the two-year study. In the Goodman study there were two groups of readers--average and slow--and the developmental patterns noted could be found in all readers as they moved towards higher proficiency and more particularly in the slow readers as they increasingly showed the same reading behavior as the average readers. With the adults of this study, I expected to find the same basic developmental patterns in miscues from the low to the high group as Goodman found in her readers over time as they moved towards higher reading proficiency.

The readers under study were members of a group participating in a special summer session at Michigan State University. All fourteen were from Mérida in the Yucatan and attend the same university where they study business administration, marketing, and related subjects. The only non-students were two members of the group who acted as instructors/leaders. The average age of the readers was 20; the leaders were slightly older. Each student had studied English for at least two but not more than four years at the high school or college level, and only two had visited the U.S. before participating in the program. The English Language Center Tests from Michigan State University indicated that the overall English Language Proficiency of the group was about mid-range (61% on a scale of 100). At the time the readers were taped, they had been in the U.S. for six weeks attending three hours of English class per day.

Each reader read aloud the same two short pieces of fiction (with the exception of two of the low group readers who could only get through the first text). Readers were told, prior to reading, that they would be asked to recall the stories. After an oral summary by the reader, the researchers asked the reader questions about the reading (following the Goodman guideline of asking only questions based on information provided by the reader) to elicit as much information as possible about the reader's understanding of the text. The retellings were later used as a check of reader comprehension. All readings and retellings were taped by the researchers, with the miscues of each reader marked on a worksheet after the tapes had been listened to by at least two different researchers. In most cases (well over 80%) the two listeners agreed on the markings; a third listener was called in for those cases which presented a problem. As with the Goodman study, the miscues were divided into two groups: (1) dialect and repeated miscues and (2) all other miscues. The second group, which is the focus of this report, was submitted to a full Taxonomy analysis. This study does not deal with those miscues which were repetitions of earlier miscues or with miscues that could be traced to dialect or Spanish language interference (as verified by a member of the University's Spanish Department).

As mentioned above, the miscues were analyzed using the full Taxonomy (with minor changes). All coding was verified, either with a member of the (former) Miscue Center at Wayne State University or with an instructor actively involved with teaching and research in reading at Michigan State. Any problem miscues were discussed by at least three researchers, and a consensus was reached. After analysis and checking, the miscue information was subjected to a computer frequency analysis. In each case, analysis was done for the individual readers, the group as a whole, and for the proficiency groups: low, medium, and high. The results of the computer analysis were examined to test the hypothesis that the same patterns in changes in miscues in the young readers as a function of increased proficiency could be found in adult readers with proficiency levels ranging from low to high.

## COMPARISON OF RESULTS WITH THE GOODMAN STUDY

### *Miscues per Hundred Words (MPHW)*

Goodman found that while there was no absolute trend in the number of MPHWs from session to session for each of her readers, average readers tended to make fewer MPHWs and that the slow readers eventually matched the reading behavior of the average readers. In other words, no straight line decrease of miscues could be found, but overall, as proficiency increased, MPHW went down. Table 1 shows that the same general pattern could be found in my data: the MPHWs were lowest for the high proficiency groups. In addition, the subjects in this study, like those in the Goodman research, showed a variation in MPHW from text to text. As Goodman points out, this information about MPHW is, of itself, unrevealing since it does not indicate how language and meaning are treated by the reader. Nonetheless, the general observations about MPHW noted by Goodman also hold for the current study: (1) all readers make miscues, (2) MPHW varies from reader to reader and from reading to reading for each reader, and (3) average readers make fewer miscues than slow readers.

TABLE 1

Miscues per Hundred Words (MPHW)

| | High | | | | | Med | | | | | Low | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| READER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| STORY #1 | 1.9 | 2.2 | 2.7 | 3.9 | 3.0 | 3.2 | 3.2 | 3.3 | 2.8 | 3.3 | 4.3 | 6.4 | 4.9 | 4.1 |
| STORY #2 | 3.7 | 2.9 | 3.7 | 4.3 | 5.6 | 4.0 | 5.8 | 4.7 | 5.3 | 5.0 | -- | 10.5 | -- | 7.5 |

More important than a simple frequency count of the oral miscues of the reader is an analysis which examines each miscue with respect to how language and meaning are manipulated. The Goodman Taxonomy asks three general questions about each miscue--questions designed to uncover the reader's treatment of language and meaning. What is the level of language and the type of operation at that level? What cueing systems are involved in the miscue (graphophonic, syntactic, or semantic)? What happens after the miscue has been produced (correction strategy)?

### *Levels of Language*

In the Taxonomy, a miscue can be judged to occur at any or, in many cases, at all of the following levels: clause, phrase, word or free morpheme, bound morpheme, and submorpheme. While the analysis of word and morphemic levels yielded no significant developmental patterns, a major trend that Goodman did find was the increasing tendency, as a function of higher proficiency, for the reader to process larger units of language. In her study, she found that at least 10% of all miscues involved manipulation of the clause structure, and 28% involved phrase structure manipulation. My data (Table 2) show similar although slightly higher overall figures and, more importantly, the increasing tendency towards processing larger units of language as proficiency increases.

TABLE 2

Percentage of Miscues at Clause and Phrase Level

| | Goodman | High | Med | Low |
|---|---|---|---|---|
| CLAUSE | 10+ | 15.6 | 14.7 | 12.3 |
| PHRASE | 28+ | 31.2 | 30.1 | 29.2 |

A good example of the increasing tendency to process larger units of language is evident in the high level readers' manipulation of dependency within and across sentences. As with the Goodman readers, the higher the proficiency, the more likely the readers of this study were to alter sentence dependency. High group readers of the current study produced the following sentences which indicate that they were processing language at a larger than word-by-word level:

Dependency Altered Within Sentences:

I gave it to him before (~~when~~) I went into his bedroom to say goodnight.

Dependency Altered Across Sentences:

perplexity now. "Why, Mr. Purcell...
The merchant's brow was puckered with perplexity. "Now why," Mr. Purcell muttered, "did he do that?"

Along with judgments about the level of language being processed by the reader, the Taxonomy asks what type of operation is being performed at these levels: substitution, insertion, omission, or reversal. For both the young and adult readers, the most frequent operation at all levels of language was substitution. While the Goodman readers more frequently omitted and inserted at all levels than the readers of this study, for all types of operations, both groups evidenced increasingly higher percentages of syntactically and semantically acceptable structures as proficiency increased. In addition, for both groups, no matter what the proficiency, the percentage of syntactic and semantic acceptability was about the same. This shows that the readers were concerned that what they produced should both sound like language and make sense even if the text was altered.

One particularly interesting developmental pattern that emerged from the Goodman study involved omissions. Goodman found that the overall frequency of omissions dropped as a function of age (her readers were primary students), though not necessarily as a function of improved proficiency. With omissions, the important difference between proficiency groups was the acceptability of the structures that resulted. The better the readers, the more likely their omissions would produce acceptable sentences which did not destroy the meaning of the text. My data suggest the same basic pattern: the high proficiency group produced the largest percentage of both semantically and syntactically acceptable structures. The medium proficiency group falls a bit behind the low group here (see Table 3).

TABLE 3

Omissions and Acceptability in Percent

| | High | | Med | | Low | |
|---|---|---|---|---|---|---|
| | Syntactic | Semantic | Syntactic | Semantic | Syntactic | Semantic |
| FULL ACCEPTABILITY | 55 | 50 | 18 | 18 | 36 | 25 |
| NO ACCEPTABILITY | 0 | 0 | 21 | 21 | 29 | 29 |

Example:

Full Acceptability:

"Certainly ~~[that]~~ is a rationalization, but..."

No Acceptability:

He turned his head towards the door ~~[to]~~ the bedroom as the boy entered.

*Cueing Systems in Language*

The Miscue Inventory Analysis is based in a psycholinguistic theory of reading which maintains that all readers use various types of information--graphic, phonemic, grammatical, semantic--within the text as cues to get to meaning.

The most proficient readers are those who use the fewest, most productive cues to move successfully from the printed text to the meaning. In a taxonomy analysis, each miscue is examined to determine to what extent and with what success the reader uses the language cueing systems available in the text. As with other parts of the taxonomy analysis, the central issue is the reader's concern with preserving the structure and meaning of the language encountered in reading.

*The Graphophonic Cueing System.* There are two types of analysis here, one which deals with the proximity of the miscue to the visual configuration of the text and a second which makes judgments on the proximity of the miscue to the sound of the expected response. The important question here is: to what extent is the reader using the information provided by the print and sound of the language? Obviously, reading requires some reference to the print, and, not surprisingly, all readers in both studies produced miscues which looked and sounded like the expected response. Goodman also found that readers at all proficiency levels made miscues which had higher graphic than phonemic proximity. This suggests that the readers obtained cues from the visual properties of words to a greater extent than from sound-letter relationships. This observation was confirmed in my study (Table 4) in which readers at all levels tended to produce miscues which had higher graphic than phonemic proximity.

In addition to these general observations, Goodman found a number of developmental patterns in the use of graphophonic information by the readers at the various proficiency levels. Tables 4 and 5 show that these same patterns emerged at the various proficiency levels for the adults of the current study. First, Goodman found that with higher proficiency, there was an increase in finer graphic and phonemic discrimination in the young readers. The adult readers, when grouped from low to high, also showed an increase in graphic and phonemic discrimination; for example, the percentage of words with high graphic similarity from low to high proficiency is 44-50-58.

Secondly, in the Goodman study, beginning or low proficiency readers tended to use cues from the beginnings and, to a lesser extent, from the ends of words, while higher proficiency readers used information from all parts of the words. The adult readers of this study showed the same patterns; the low proficiency group had the highest percentage of miscues (graphic and phonemic) in the category beginnings and ends. With the high group, on the other hand, most of the miscues had beginnings, middles, and ends similar to the expected response. For miscues with no graphic and phonemic similarity, Goodman found that there was an increase in semantic acceptability as a function of improved proficiency. In the current study, the same pattern holds. A low proficiency reader produced the following miscue,

bluff
They rose like windblown balls of fluff.

which varied from the expected response by only a single letter yet produced an utterance which made no sense. A high group reader produced a miscue which had no graphic or phonemic similarity to the text word but nonetheless preserved both the sense and the structure:

But
Now let me think...

The higher the reading proficiency, the more likely it was that a miscue which had no graphic or phonemic similarity to the expected response retained both the structure and the sense of the text.

Along with the general patterns of finer graphic and phonemic discrimination with increased proficiency, Goodman also found an overall tendency for readers to rely more heavily on the graphophonic (rather than the syntactic or semantic) cueing system of language as the text material became more difficult for them. In the case of the young readers, "more difficult" usually meant reading material for a higher grade level or material that contained unfamiliar concepts. In the current study, each reader was given two stories to read. The general reader consensus was that the second story was more difficult, and the retelling and comprehending scores verified this. As with the earlier study, the more difficult material caused the readers to rely more heavily on the graphophonic cueing system.

TABLE 4

Percentage of Graphic and Phonemic Similarity

| | High | | Med | | Low | |
|---|---|---|---|---|---|---|
| | Graphic | Phonemic | Graphic | Phonemic | Graphic | Phonemic |
| NO SIMILARITY | 1.3 | 8 | 1.0 | 8 | 1.7 | 8 |
| LETTERS AND SOUNDS | 9 | 7 | 7 | 6 | 6 | 5 |
| BEGINNINGS, ENDS | 32 | 33 | 42 | 47 | 48 | 51 |
| BEGINNINGS, MIDDLES, ENDS | 58 | 52 | 50 | 38 | 44 | 37 |

TABLE 5

Semantic Acceptability X No Similarity and Single Difference Graphic and Phonemic (in Percent)

| | High | | Med | | Low | |
|---|---|---|---|---|---|---|
| | Graphic | Phonemic | Graphic | Phonemic | Graphic | Phonemic |
| NO SIMILARITY | 50 | 42 | 50 | 53 | 67 | 14 |
| SINGLE DIFFERENCE | 43 | 46 | 33 | 32 | 20 | 24 |

*Syntactic and Semantic Cueing Systems.* In these categories the Taxonomy asks to what extent the reader is responding to the following questions. Does what I am saying sound like language? Does it make sense? Language contains numerous grammatical and semantic cues that a reader can use to get to meaning. Although, strictly speaking, the separation of syntax and meaning is somewhat artificial, the Taxonomy here attempts to make independent judgments about how a reader is responding to the way the language of the text operates and how the meaning is built through the text.

The first very general question that the Taxonomy asks about these categories is whether the miscue transforms the language of the text. Goodman found that when her readers miscued, they usually transformed the printed language. The major developmental trend that she found among the young readers was an increase in the number of optional transformations produced in the miscues as the readers became more proficient. The adult readers, like Goodman's young readers, tended to transform the text language when they miscued. And like the young readers with high level proficiency, the adult high proficiency readers produced optional transformations more frequently (see Table 6). Both the young and adult readers showed another developmental trend: with increased proficiency, there was higher acceptability, both syntactic and semantic, when a transformation did take place.

TABLE 6

Percentage of Transformations

| | High | Med | Low |
|---|---|---|---|
| NO TRANSFORMATION | 37 | 38 | 31 |
| TRANSFORMATION | 47 | 47 | 48 |
| ALTERNATE TRANSFORMATION | 0 | .4 | 0 |
| OPTIONAL TRANSFORMATION | 10 | 5.6 | 7 |
| STRUCTURE LOST | 6 | 9 | 14 |

In a taxonomy analysis miscues are next examined to determine how the reader treats syntactic and semantic information available in the text. The most important decision that the researcher must make is the extent of acceptability of the miscue. Even when readers substantially alter the word-by-word sequence of the printed material, they may produce language which is partially or wholly acceptable and which makes sense. The Taxonomy allows for a number of judgments here about both the syntactic and the semantic acceptability of a miscue; these decisions can be made independent of each other, but semantic acceptability cannot be rated higher than syntactic acceptability. A miscue can be judged as: not acceptable--it neither sounds like language (syntactic) nor makes sense (semantic); partially acceptable--the miscue is acceptable with the portion of the text which precedes it or with that which follows it; acceptable--the miscue is both structurally acceptable and meaningful. In this last category, a miscue can be acceptable within the sentence only, or it may be fully acceptable within the entire text.

Goodman noted a number of developmental trends in syntactic and semantic acceptability as her young readers became more proficient. First, the higher the reading proficiency, the larger the percentage of fully acceptable structures, both syntactic and semantic. Her average readers had 63% and 69% syntactically acceptable structures within the whole passage, as compared to 50% and 44% for the slow readers. The percentages for semantically acceptable structures within the passage, while generally lower overall, were also, on the average, lower for the slow readers (36% and 46% to 36% and 26%). Second, Goodman's readers showed a decline in the percentage of miscues with no acceptability as they became more proficient. For the slow readers, 30% and 29% of total miscues had no syntactic acceptability, and 34% and 32% of the miscues had no semantic acceptability. The average readers had corresponding scores of 15% and 12% for no syntactic acceptability and 32% and 29% for no semantic acceptability. Table 7 shows that these same two patterns held true for the readers in the current study: with higher proficiency, a larger percentage of miscues were acceptable within the total passage (syntactic and semantic), and a smaller percentage of miscues resulted in unacceptable structures and meaning loss.

Goodman also found that the better the readers, the more flexibility they demonstrated in handling syntactic structures. Specifically, as readers became more proficient, their ability to maintain syntactic acceptability increased even if the sentence was not semantically acceptable. This pattern was repeated in the current study; higher proficiency readers consistently showed sensitivity to grammaticality in the structures they produced. To a much larger extent than the low group readers, they managed to preserve syntactic acceptability even when their miscues were semantically unacceptable. The following miscues were produced by high group readers. In both cases, the resulting structures are grammatical even though they are not semantically acceptable.

futures
A gray pallor deadened his pinched features.

ear (or Seer)
The strange man left him with a distinct sense of the eerie.

This concern for syntactic acceptability is again reflected in the fact that the high group readers produced miscues which were of the same grammatical function as the expected response a full 71% of the time (compared to 69% for the medium group and 63% for the low group).

TABLE 7

Syntactic and Semantic Acceptability in Percent*

| | High | | Med | | Low | |
|---|---|---|---|---|---|---|
| | Syntactic | Semantic | Syntactic | Semantic | Syntactic | Semantic |
| IN PASSAGE | 66 | 32 | 56 | 23 | 49 | 17 |
| IN SENTENCE | 4 | 18 | 4 | 15 | 2 | 13 |
| WITH AFTER | 4 | 4 | 4 | 4 | 6 | 6 |
| WITH PRIOR | 20 | 21 | 24 | 24 | 23 | 26 |
| NO ACCEPTABILITY | 7 | 25 | 11 | 34 | 18 | 39 |

*Numbers rounded off

A large percentage of the miscues which were semantically unacceptable for the young and the adult readers involved non-words. Since non-words can preserve the syntactic structure of the sentence (through inflection, intonation), a look at the patterns of non-word substitution miscues can provide further information about the reader's concern for maintaining grammaticality even when meaning is lost. Goodman found that more proficient readers tended to have more non-word miscues than slower readers, but that the percentage of syntactic acceptability for these non-words increased with proficiency. She found further that for all her readers, non-words had graphic and phonemic proximity that was much higher than the miscues in general. This, of course, follows from the observation above that the more difficult the material for the reader (in this case, unfamiliar vocabulary words), the heavier the reliance on the print.

The non-word miscue pattern for the adult readers was different in one respect: the highest percentage of non-words occurred in the medium rather than the high group (low=22%; medium=24%; high=19%). Goodman's other observations held for the readers of the current study: higher proficiency meant a higher percentage of syntactically acceptable structures for non-words (Table 8) and higher graphic and phonemic proximity for non-words than for miscues in general for all readers.

TABLE 8

Percentage of Non-Words Syntactically Acceptable

| | High | Med | Low |
|---|---|---|---|
| NOT ACCEPTABLE | 11 | 14 | 17 |
| FULLY ACCEPTABLE | 87 | 84 | 83 |

Once a miscue has been judged syntactically and semantically acceptable as a piece of language, that is, makes sense and sounds like language within the sentence or the whole text, the Taxonomy allows for further analysis on the extent of change that has taken place as a result of the miscue. The miscue can produce little or no change, a major or a minor change, or can be judged as differing only slightly from the text. Independent decisions are made about syntactic and semantic change; semantic ratings may be higher than syntactic.

For all readers in the Goodman study, once a miscue was judged as acceptable, either semantically or syntactically, there was usually very little change to either the structure or the sense of the text. The developmental pattern here was in the direction of still less change. Like these young readers, the adults in the current study changed the intended structure and sense of the text very little in those miscues which were fully acceptable. The readers at the different proficiency levels had almost equal percentages of miscues which produced little or no syntactic change. Higher proficiency meant an increase in the percentage of already semantically acceptable miscues which produced little or no semantic change (low=49%; medium=62%; high=61%). Below are some examples of the types of changes the adult readers made in their miscues.

### Syntactic Change

silence
Major: The liberator's silent and lifted gaze watched after them.

Minor: I gave it to him before ~~(when)~~ I went into his room.

drink
Little: The men drank the drinks in silence.

### Semantic Change

madam
Unrelated: Only a madman would give a loaded revolver to an idiot. (The 'madman' is supposed to be the speaker; reader should at this point realize that this statement is the moral of the story.)

brought
Major: The man who bought the two doves...
(The whole story revolves around the man buying the doves.)

distinctive
Minor: The man left him with a distinct sense of the eerie.
(This miscue does not cause any important change in the story.)

at fifty-cent's reduction...
Little: ...which told him that at a fifty-cent reduction...

*Correction Strategy*

Perhaps one of the most revealing pieces of information provided by a miscue taxonomy is what a reader does once the miscue has been produced. If readers are aware of the miscue, they have two options: they can continue on in the text (perhaps silently correcting) or they can regress and attempt to correct the miscue. Observations of when a reader chooses to attempt correction and how successful those attempts are allow for some insight into how the reader is processing the language of the text. Miscue studies have shown that all readers correct at some times, that is, they all have some type of correction strategy. Both the Goodman study and the current work confirm this observation. Both groups of readers were usually successful when they attempted to correct their miscues (low=71%;medium=75%; high=79%). Goodman found that as the readers became more proficient, they corrected more frequently to a point where correction behavior leveled off. For adult readers, higher proficiency also meant more corrections (see Table 9).

TABLE 9

Percentage of Miscues Corrected

| | High | Med | Low |
|---|---|---|---|
| NO CORRECTION | 70 | 80 | 84 |
| CORRECTION | 23 | 15 | 11 |
| ABANDONS | 2 | .5 | 1 |
| UNSUCCESSFUL | 5 | 4.5 | 4 |

The higher percentage of corrections which accompanied increased proficiency, as Goodman points out, often resulted in over- or unnecessary correction by the more proficient readers. The high proficiency group of adult readers, for example, corrected 24% of their miscues which were already syntactically acceptable in the whole passage and 15% of those fully semantically acceptable (compared to 14% and 12% for the medium group and 8% and 5% for the low group). The general developmental patterns which Goodman found in her young readers' use of corrections strategy were: movement towards higher number of corrections with increased proficiency; increasing tendency, with higher proficiency, to correct those structures which resulted in unacceptable or partially acceptable structures; and, given an acceptable structure, more likelihood of correction if change was major. The adult readers' behavior showed the same patterns at the various proficiency levels in all three of these areas.

## GENERAL OBSERVATIONS ABOUT BOTH GROUPS OF READERS

Some general similarities among the groups surfaced during the investigation. These were:

- All readers made miscues.
- MPHW varied from reader to reader and from text to text.
- All readers studied had enough visual discrimination to produce miscues which had some graphic and phonemic similarity to the expected response (at least 90% for the Goodman study and at least 92% for the present study).
- When readers produced miscues with no graphic or phonemic similarity to the text, they tended to be more syntactically and semantically acceptable than those with high graphic and phonemic proximity.
- Readers showed a concern with both producing language that sounded like language and making sense. In both of the studies, most of the miscues (Goodman=50%+; mine=60%+) were both syntactically and semantically acceptable.

- When readers produced miscues that resulted in acceptable structures, they tended to cause very minor change to the syntax and the meaning of the text.
- All readers corrected their miscues at some time and were usually successful in these corrections.

## DEVELOPMENTAL PATTERNS

The following general developmental patterns were found from low to high proficiency in both the Goodman study of beginning readers and in the present study of adult Spanish speakers reading in English as a second language.

- Decrease in MPHW with increased proficiency.
- Increase in processing of larger units of language (more phrase and clause level miscues) with increased proficiency.
- Higher frequency of acceptable syntactic and semantic structures with higher proficiency.
- Finer graphic and phonemic discrimination (to a point) as a function of more proficient reading.
- A change in the amount of graphophonic information used by the reader. From low to high proficiency--more information from whole word used.
- Increase in semantic and syntactic acceptability for miscues with no graphic and phonemic similarity as proficiency gets higher.
- Movement towards greater and more stable semantic and syntactic acceptability of miscues as readers improve their proficiency.

Once a miscue is judged as acceptable, movement towards little or no change to the intended structure or sense of the text with increased proficiency.

- Correction strategy; with increased proficiency, more corrections; more frequent correction of unacceptable or partially acceptable structures; increased tendency to correct only major changes in syntax or meaning for miscues which are already acceptable.

## CLASSROOM IMPLICATIONS

The present study, although limited in scope, does seem to point to similarities between native and non-native--child and adult--reading acquisition. Clearly these observed similarities raise some exciting questions for future research. Of particular interest would be a longitudinal study of adult readers similar to the Goodman study of young readers.

In addition to ideas for study, the research also holds some important implications for teaching and testing reading in the TESOL classroom. Very briefly, here are some of these suggestions.

### *Texts*

Since readers use various cues to get to meaning (syntactic, semantic, graphophonic), a text should be rich in cues. It should provide a real-life context for the reader to use in building meaning and should not isolate any one part of language (vocabulary included).

### *Testing*

A simple frequency count (MPHW, for example) does not provide much useful information about how the reader is processing language. A test, like a good reading text, ought to provide a wealth of cues that readers might use to get to the meaning. Isolation of any one part of language (again vocabulary) prohibits a reader from taking advantage of cues which do occur in natural language situations. There seem to be certain types of reading behavior, correction strategy, for example, that might help a tester evaluate how the reader is processing language.

*Teaching*

This study suggests that certain developmental patterns do, in fact, exist, and a suggestion for teaching might be to work with these developmental patterns. Specifically, the concern for meaning, which all readers in both studies demonstrated, should be central. Any classroom activity which orients the reader away from meaning interferes with the reader's natural inclination to make sense of the printed material. Since readers seem to develop fairly efficient correction strategies, classroom activities which encourage the reader to strive for sense and meaning rather than letter-perfect reading would seem to enhance this natural inclination.

# Coupling as a Text-building, Myth-evoking Strategy in Vietnamese: Implications for Second Language Reading[1]

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I would like to depart from the conventional structure of the academic essay and begin, not with a statement of thesis, but with a series of illustrations.

### Illustration I: The Vietnamese Myth of Origin

> Long ago before there were people in the world King Lạc Long [the dragon of Lạc], whose home was the realm of water, met the beautiful Âu Cơ, the fairy Queen of the mountains. Love developed between them and soon Âu Cơ gave birth to a sack of 100 pearly eggs from which sprang 100 beautiful sons. The family lived happily for some time, but then Lạc Long explained to Âu Cơ that they could not remain together forever because he was from the realm of water, she from the high mountains. Âu Cơ agreed. They decided that she should take 50 sons and dwell in the mountains and he should take 50 sons and return to the sea. The children who went with Âu Cơ became the ancestors of the Vietnamese highlanders, well-known for their skills in hunting and upland farming. Those who went with Lạc Long became the ancestors of Vietnam's lowland farmers and fisherman. Lạc Long gave the first born of his sons the title Hùng Vương. He became the founder of the Hùng Vuong Dynasty which lasted from 2879 to 258 B.C.
>
> Vietnamese still celebrate Hùng Vương Day which falls on the tenth day of the third month of the lunar calendar. Vietnamese refer to themselves as *con rồng cháu tiên*, the children of dragons and fairy spirits. When they wish to refer to their country they use the coupled words *đất nước* [lit.: land water] or *non nước* [lit.: mountain water].[2]

### Illustration II: Vietnamese Proverb

> The work of a father is like the mountain of Thái Sơn;
> The duty of a mother like water flowing from an inexhaustible spring.

### Illustration III: Trung Hiếu 'Loyalty-Filial Piety'

In a Vietnamese encyclopedia, the following story is offered as an explanation of the coupling word *trung hiếu*:

> During the reign of King Chiêu Vương there was a mandarin named Thạch Chủ who was well-known for his honesty, fairness, and sincerity. One day while making an official tour, he learned of the existence of a group of murderers. After conducting an investigation, he learned that his own father was the principal culprit. Turning his carriage around, Thạch Chủ sped back to the palace and reported to the king as

follows: "The killer is the father of this your humble subject. I cannot arrest my father. I also cannot for the sake of my father disregard the law. To be a mandarin and disregard the law is intolerable, so please, your highness, punish this your humble subject for his crime.

The king decreed: "I waive punishment in your case."

Immediately Thạch Chủ replied: "To be a son and not honor one's father is to be impious [not *hiếu*]; to be a subject and not uphold the laws of the land is to be disloyal [not *trung*]. Being lenient is a favor a king can dispense; accepting responsibility for improper actions is a duty a subject must perform."

As soon as he had finished speaking, he drew out a sword and committed suicide in front of the king.

### Illustration IV: Hồ Chí Minh Lecturing Cadres

"We must be loyal [trung] to the party, pious [hiếu] with the people." [Phải trung với đảng, hiếu với dân.][3]

### Illustration V: Kim Vân Kiều, an Early Nineteenth Century Verse Narrative

*Kim Vân Kiều* has been called the rational epic of Vietnam. It is the story of a girl, Thúy Kiều, who must choose between *hiếu* 'filial piety' and *tình* 'love.' One day during a walk in a garden she meets and falls in love with the scholar Kim Trọng; they exchange vows of eternal devotion. Shortly thereafter Thúy Kiều's father is unjustly accused and thrown into prison. The only way Thúy Kiều can help him is to let herself be sold into marriage to the evil Mã Giám Sinh. By agreeing to this marriage she sacrifices *tình* for *hiếu*. In the following lines Thúy Kiều weighs *tình* and *hiếu* and finds the latter a "heavier" virtue:

> Kieu had to save her kin, her flesh and blood.
> When evil strikes, one bows to circumstance.
> When one must weigh and choose between one's love
> and filial duty, which will turn the scale?
> Kieu brushed aside her solemn vows to Kim--
> she'd pay a daughter's debt before all else.
> Resolved on what to do, she spoke her mind:
> "Hands off my father please, I'll sell myself
> and ransom him."[4]

### Illustration VI: The Scholar and the Lady Tavern Keeper

The following story occurs in a Vietnamese book on how to compose poems--in the section that explains how to *đối* 'oppose.'[5] It is offered as an illustration of the dangers, in opposing, of not hearing out the complete statement of one's opponent before one opposes it. The scholar appears foolish because in Vietnamese his reply to the tavern keeper is unpleasing both in rhythm and sense.

There once was a young man who failed his exams. On the way home he stopped off at a tavern to rest for the night before continuing his journey. [illegible]icing that the owner appeared to be an attractive and educated woman, he began to flirt with her.

Annoyed by his rude behavior, the lady tavern owner decided to fend off his advances in a clever manner. Therefore she said to him: "Since, as you say, you have just returned from taking the exams, probably you are very good with words. So let me present to you some words to *đối* [oppose]; if you can oppose them, then I'll agree to shut down my cafe and follow you.

The young scholar, confident he would win, told the woman to go ahead.

She offered the word *night*; he opposed it with *day*.

She said *late*; he opposed it with *early*.

She said *chicken*; he opposed it with *pig*.

She said *crow*; he opposed it with *cry*.

She said *cock-a-doodle-do*; he countered with *pawk pawk*.

She next offered *tavern owner*; he countered with *Confucian scholar*.

She said *wake*; he opposed it with *lie*.

She said *up*; he countered with *down*.

She said *to*; he said *in order to*.

She offered *worry*; he countered with *count*.

She said *money*; he said *rice grain*.

Then the tavern owner said: "Now I'll read what I said and you read what you said." She read as follows: "Late at night, when the rooster crows cock-a-doodle-do, the tavern owner wakes to worry about money."

Then the young scholar read his words: "Early in the morning, when the pig cries pawk pawk, the Confucian scholar lies and counts rice grain."

The tavern owner was about to speak when the young scholar said "Forget it!" and quickly left the tavern without saying another word.

## Illustration VII: Phạm Quỳnh's Analysis of Duty and Rights

Phạm Quỳnh, a well-known man of letters in early twentieth century Vietnam, became an editor of a very prestigious and influential journal called *Nam Phong* '*Southern Ethos*.' Although he has been attacked by historians for collaborating with the French colonialists, Phạm Quỳnh saw his role as helping Vietnamese achieve a synthesis of the best of Western and Eastern values. Those who disagree with his politics admit the high quality of his intellect. Here is how he begins an essay called "What Is Duty?" which appeared in *Nam Phong* in 1917.[6]

> In Confucianism there is a saying: "If one wants to begin the study of Confucius and Mencius, first one must be able to distinguish *nghĩa* [duty] from *lợi* [rights].
>
> Confucian scholars referred to *nghĩa*, i.e. what we call *nghĩa vụ*; they referred to *lợi*, i.e. what we call *quyền lợi*. The two views represented by *nghĩa vụ quyền lợi* [duty-rights] are actually the basis of ethics. What is the proper relationship between duty and rights? This is an important question that people of all generations and countries must consider. To answer it is to explain the meaning of human life.
>
> In general, earlier societies respected duty more than rights. In fact, of the two views represented by duty and rights only duty was important: no one thought about rights. In addition, those in a society who, because of their position, had rights in regard to others considered those rights as duties. The king in regard to a subject, the father in regard to his child, the husband in regard to his wife all had their special rights, and also their special duties. The king had the right to rule his people, but that right entailed the obligation to see to it that his people were contented and peaceful; the father had the right to instruct his child, but that right entailed the responsibility of bringing that child to maturity; a husband had

> the right to direct his wife, but that right entailed the responsibility of keeping the family prosperous and happy. In sum, in earlier times the rights view was the minor view. Nowadays it seems that just the opposite is the case: the minor has become the major and the major has become minor; rights are respected more than duty.
>
> This change has come from Europe...

### Illustration VIII: Nguyễn Bé's Philosophy of *Chung-Thủy*

Nguyễn Bé, who now lives in the U.S., was an assistant province chief and instructor in the School for Revolutionary Development Cadre at Vũng Tàu under the regime of Nguyễn Văn Thiệu. While he held these positions, he wrote of a philosophy he called Chung Thủy, a system of thought and conduct that he hoped would save Vietnam. Chung Thủy [lit.: end-beginning] means faithful, loyal. It is commonly used in reference to women: a faithful wife, for example, is chung thủy; she is with her husband in the beginning and in the end.

In Nguyễn Bé's system, chung thủy has many meanings. It means, among other things, loyalty, honesty, and an awareness of consequences. This last meaning, he says, is the most important:

> The third and most important meaning of "CHUNG-THỦY": Think to the end, i.e., the consequence, each time you start acting....
>
> As we know, the western philosophy knows only the start, or the beginning of an act, the "THUY," but doesn't know the "CHUNG" its end, i.e., cannot anticipate the consequence or know to where the future will lead. Thus, the saying, "knowledge for the sake of knowledge" illustrates sufficiently that the effect of western philosophy is that western discoveries are only the results of chance and inquisitive temperment. Therefore, the results can be either good or bad. Nuclear weapons, weapons which today are a grave threat to human life, are the natural consequences of the western philosophical system which does not think to the end.
>
> As for the east, still harboring many illusions, still slumbering in the past with a lack of will to act...it hesitates to throw itself into practical endeavors, i.e., it does not want to start, it will not begin.[7]

### Illustration IX: A Man on the Street Analysis of the American Withdrawal

On a Saigon street corner in 1973 a Vietnamese civil servant in the Thiệu Regime was discussing the decline in American support for the government of the Republic of Vietnam with an American who spoke Vietnamese.

> "The trouble with Americans," he said, "is that they have thủy [beginning] but no chung [ending]. That is the whole of the problem."

### Illustration X: Hồ Chí Minh on the Essential Qualities of a Movement

> A movement must be continuous and have a true substance. It shouldn't just be all form; it shouldn't 'Have the head of an elephant and the tail of a mouse.' [Đầu voi đuôi chuột.][8]

### Illustration XI: Understanding Vietnamese Love Stories

A principal of a high school in Hue, speaking in Vietnamese to an American, was trying to help his guest understand a Vietnamese love story that he (the American) had just read. Here is a translation of what he said:

> To understand this story, and many modern southern Vietnamese stories, you must understand the concept of *duyên-nợ* [lit.: predestined affinity-obligation]. Vietnamese believe that marriage is a matter of *duyên* or *nợ*. If one's mate turns out to be lovely and compatible, then that is an occurrence of *duyên*; if, on the other hand, one's mate becomes unpleasant and incompatible, then one has assumed a *nợ*, an obligation. People whose spouse is all *nợ* may wonder what they did wrong in their previous incarnation to deserve such a fate.

What do these illustrations add up to? How do they relate to problems encountered in teaching non-native speakers of English how to read?

For me these illustrations support Whorf's assertion that "people act about situations in ways which are like the ways they talk about them."[9] People whose word for loyalty or faithfulness is *chung thủy* 'end-beginning' will tend to see loyalty and faithfulness in a certain way. In judging whether a man is loyal and faithful, they will tend to ask themselves whether his behavior at the end of an episode is consistent with his behavior at the beginning, whether, as Vietnamese say, "his before and after are like one" [trước sau như một]. In telling a story or conducting a revolution, they will want to see it through to completion lest people observe that it has the head of an elephant but the tail of a mouse.

This is not to say that only Vietnamese judge a man to be loyal when his end behavior is consistent with his beginning, or that only Vietnamese may pause to consider whether fate was kind or unkind to them in marriage, or that only Vietnamese desire to see things through to completion. The point is not that the language one speaks determines one's view of the world. Language doesn't determine; it constrains. It makes certain conclusions regarding events which are more likely than others. Vietnamese are encouraged to perceive certain situations in a special way, and to feel and act strongly when they find themselves in these situations, because their language instills in them certain predispositions. What is true for Vietnamese is true for all peoples. When events and our language tend toward congruence, this affects us strongly. When it occurs, we believe we have had an insight, stumbled upon a truth.

What aspect of Vietnamese has this power to predispose? There are probably many aspects that are responsible for different predispositions, but the one I would like to discuss here, the one that is found in the above illustrations, is coupling--the juxtaposing of two items that are antithetical, or nearly antithetical, in meaning.

It is difficult to overemphasize the importance of coupling in Vietnamese language and culture. Vietnamese describe their country as emerging from the reconciling of oppositions between dragon and fairy, sea and mountain, water and land. The creation of nationhood is mirrored in the process of idiomization of the coupled expressions *con rồng cháu tiên* [lit.: child dragon, grandchild fairy] and *đất nước* [lit.: land water]. Some time ago these expressions ceased to be taken literally--dragons merged with fairy spirits, land united with water--and the people, country, and language of Vietnam entered the world. Much of Vietnamese political and social history can be seen as an extended argument on the proper relations between the members of the coupling words *Hán Việt* 'Sino-Vietnamese' and *trung hiếu* 'loyalty-filial piety.' Debate throughout the centuries on the proper conduct of men and women, at least among the more Sinicized elements of the population, has been a commentary on *trung trinh* 'loyalty' (primarily for men)-'chastity' (primarily for women).

Coupling was defined above as the juxtaposing of antithetical elements. More precisely, it is the placing of members which are syntactically and semantically equivalent in topographically equivalent places in a text.[10] Each word from the game of *đối*, or opposing, described in Illustration VI, for example, is coupled with another:

Tavern keeper:

> Đêm khuya gà gáy ó o, chị quán thức dậy mà lo đồng tiền.
> 'Night late rooster crow doodle do mistress tavern get up and worry coin money.'

Scholar:

> Ngày sáng heo kêu cục tác, thầy nho nằm xuống đặng tính hột thóc.
> 'Day early pig cry pawk pawk, master Confucian lie down to count grain rice.'

Night is coupled with day (1) because the two words are in syntactically equivalent positions in their respective sentences, (2) because the two words are semantically related: they belong to the same thought-mass[11] "parts of the day," and (3) because they occupy equivalent topographical positions in their respective lines: both occupy the first slot. The other couplings (late and early, rooster and pig, etc.) also exhibit these three equivalences.

In freer English translations members of couplings often cannot be as starkly opposed as they are in Vietnamese because, when writing in English, one must insert many articles, prepositions, and subordinating connectives. In a freer English translation of the above exchange, for example, night and day could not be so starkly opposed because the English phrases "late at night" and "early in the morning" have an unequal number of words. Night and day would therefore be pushed into inequivalent topographical positions. Because oppositions in Vietnamese are presented against a background uncluttered with prepositions and subordinating connectives, they stand out in bold relief. The fact that the Vietnamese language allows this stark opposition of elements may partially explain why coupling has become an important rhetorical strategy in the Vietnamese tradition.

But many English texts contain couplings. Samuel Johnson, the eighteenth century man of letters, is well known for his balanced style. There are probably occasions when people of all cultures would find symmetry of expression pleasing and appropriate. So what makes Vietnamese coupling special? It is special because, whereas coupling for English writers is primarily a matter of style, for Vietnamese it has been more than a stylistic embellishment: it has been a way of solving problems. Coupling in Vietnamese is what Western rhetoricians call a "heuristic procedure"; it is a way of using language to discover things about the world. Admittedly we also compare and contrast in writing essays and "weigh" alternatives in making decisions, but because coupling has not traditionally been a guiding aesthetic principle, it has not influenced the way we approach the world as much as it has the Vietnamese. So many Vietnamese proverbs are coupled phrases or sentences that it becomes impossible in the Vietnamese tradition to separate the process of coupling from the process of acquiring conventional wisdom.

Both fictional and real characters employ this process: they juxtapose words and phrases to display for themselves in stark terms the nature of their dilemma. Then they make a choice. In Illustration II Thạch Chủ weighs the virtues of loyalty and filial piety. When neither virtue tips the scale, he chooses suicide as the only alternative. In Illustration V Thủy Kiều weighs the demands of love and filial piety. When she realizes the latter is "heavier," she decides to sell herself to save her father. In Illustration VII Phạm Quỳnh weighs nghĩa vụ 'duty' and quyền lợi 'rights' and finds that the former should be given more weight in developing countries such as Vietnam. Coupling is undoubtedly an important ingredient of many Vietnamese texts--even of those that contain only a sprinkling of coupling words and phrases--because it is a part of the inference-generating process that the text creators went through preparatory to writing down their ideas.

How often is coupling present in the actual words of a text? It is not, of course, the way sentences are constructed in normal conversation. People do not make sure their utterance opposes the previous utterance of their interlocutor unless, like the scholar and the tavern keeper in Illustration VI, they are playing the game of đối. Nevertheless, coupling is, as Nguyễn Văn Ngọc points out, "the abc's of Vietnamese, the writer's first step."[12] It was a prominent feature of almost all Vietnamese written texts until the early twentieth century. Throughout Vietnamese history, diplomatic notes, examinations, and stories were composed by coupling one phrase with another, or one line with another, or one section of a text with another. Vietnamese writers knew that if they didn't use coupling, their readers would think they were unlearned. The emergence of prose--writing with no rhyme and little or no coupling--is a recent development in Vietnam, an event which occurred simultaneously with Vietnam's change from a traditional to a modern state. Even in modern prose, however, one still finds considerable coupling between and within sentences, and in conversation coupling, while not common between utterances, does occur within utterances in the form of coupling words and four-syllable idiomatic expressions.

Coupling remains prevalent in modern Vietnamese in part because four-syllable expressions continue to be popular. We have them also--"First come, first served"; "Last hired, first fired"--but the Vietnamese have many more than we do, and they use them much more often. It is a rare Vietnamese conversation that does not contain at least one. Below I have written the coupling words that sum up Illustrations I, X, and XI; included also are the four-syllable idiomatic expressions that can be generated from the coupling words:

Illustration I: tiên rồng [lit.: fairy spirit-dragon]: the ancestors of the Vietnamese, the Vietnamese race.

con rồng cháu tiên [lit.: children dragon grandchildren fairy spirit]: the ancestors of the Vietnamese, the Vietnamese race.

Illustration X: đầu đuôi [lit.: head-tail]: from beginning to end.
đầu voi đuôi chuột [lit.: head elephant tail mouse]: refers to something begun well but ended poorly.

Illustration XI: duyên nợ [lit.: predestined affinity-obligation]: fate, particularly in regard to marriage.
may duyên rủi nợ [lit.: good luck predestined affinity, bad luck obligation]: If one is lucky, one's spouse will be compatible; if one is unlucky, one's spouse will be an obligation.

If coupling in Vietnamese is a text-building strategy and heuristic procedure, what are comparable strategies and procedures in the English tradition? I would nominate the following: arranging items in a linear order, classifying into categories, and considering issues as problems to be solved by the application of method--usually the scientific method consisting of the stages *analyze*, *hypothesize*, *test*, *conclude*, and then *act*.

The preceding statement exemplifies these procedures at work. In it I have arranged American heuristic devices in a linear sequence according to a principle which I haven't yet made explicit, but which is roughly related to chronology and degree of consciousness. I'm assuming that the scientific method came later and that it is a more consciously applied device than the devices of arranging things in temporal sequence or classifying them according to some criterion. But I'm not sure of these things. By arranging I'm also inventing, discovering things about my topic. The above statement is also a classification. In it I divide "Important Heuristic Devices Used by Americans" into three types. And the essay of which this sentence is a part is a loose application of a problem-solving method. In it I take a problem--the difficulty of comprehending foreign language texts--which I assume is solvable. I then analyze the problem, primarily by giving illustrations of texts which on first hearing or reading I only partially understood. I then hypothesize: comprehending second language texts is difficult because the inference-making processes that contributed to their formation are unfamiliar. I do not submit my hypothesis to an empirical test, but the reader is invited to reread my illustrations to see if they are more comprehensible after he/she has learned about the importance of coupling as a text-building strategy. I shall state my conclusions and suggestions for action later.

Besides serving a heuristic function, coupling in Vietnamese is also involved in myth-evoking, in activating in a hearer or reader's mind units of stored cultural knowledge. Myth-evoking is not a separate process but a part of text-building. It enables a speaker or writer to say much with few words by exploiting shared knowledge. Most Vietnamese coupling words and four-syllable expressions are rich in associations. Some have been recontextualized so many times they have become touchstones to the history of an entire civilization. For Vietnamese, coupling words such as *trung-hiếu* 'loyalty-filial piety,' *chung thủy* 'faithfulness,' and *duyên nợ* 'predestined affinity (or lack of it) in marriage' and four-syllable expressions such as *trai tài gái sắc* 'men are talented, women are beautiful,' *Nấu sử sôi kinh* [lit.: to cook history, to steam classics] 'to study hard,' and *chống Mỹ cứu nước* 'oppose the Americans, save the country' evoke certain pre-texts, or, if one prefers the terminology of Van Dijk and researchers in Artificial Intelligence and computers, they activate frames--"units of conventional knowledge according to which mutual expectations and interactions are organized."[13]

Following Barthes, I prefer to call the knowledge evoked by these Vietnamese expressions myths. Some may think a coupling word is too small to evoke an entire myth, but, Barthes points out, "a minute form (a word, a gesture, even incidental, so long as it is noticed) can serve as signifier to a concept filled with a very rich history."[14] A fringe of hair on the forehead, for example, can be used to suggest "Romanness" in a performance of *Julius Caesar*.[15]

There are, says Barthes, two systems: a linguistic system and a myth system. The latter system "gets hold of" the first and uses it to build its own system. Whether we are dealing with language or another sign system, such as pictures, there is *meaning* and *form*. If I am at the barbers, says Barthes, and am presented with a copy of *Paris-Match* showing a young Negro in French uniform saluting the French tricolor, this is what I see: this Negro saluting is the *meaning* of the picture. But, continues Barthes, this pictorial sign becomes involved in "a second-order semiological system" which is myth. This picture tells me that "France is a great empire, that all her sons, without any colour discrimination, faithfully serve under her flag, and that there is no better answer to the detractors of an alleged colonialism than the zeal shown by this Negro in serving his so-called oppressors." This second system is parasitical on the first. The meaning of the picture is a crucial input to the myth producing system, but after it becomes *form*, the meaning becomes "impoverished." One must "put the biography of the Negro in parentheses," says Barthes, as one understands the *Paris-Match* picture as myth.[16]

When coupling words are used to evoke myths in Vietnamese, their original meaning, like the biography of the Negro soldier, is often obscured. *Trung hiếu* 'loyalty-filial piety,' for example, means loyalty, primarily to one's king, and piety towards one's parents, but it is also a shorthand expression used to evoke the entire mythology of Confucianism. When used by Vietnamese, the meaning of *trung hiếu* is by no means completely suppressed. Meaning, says Barthes, is never completely killed by a myth-evoking sign:

> But the essential point in all this is that the form does not suppress the meaning, it only impoverishes it, it puts it at a distance, it holds it at one's disposal. One believes that the meaning is going to die, but it is a death with reprieve; the meaning loses its value, but keeps its life, from which the form of the myth will draw its nourishment. The meaning will be for the form like an instantaneous reserve of history, a tamed richness, which it is possible to call and dismiss in a sort of rapid alternation: the form must constantly be able to be rooted again in the meaning and to get there what nature it needs for its constant game of hide-and-seek between the meaning and the form which defines myth.[17]

Because Hồ Chí Minh knew that the coupling word *trung hiếu* was one of the richest words in the Vietnamese language, a word that had been a source of spiritual nutriment for centuries of Vietnamese history, he called on it to nourish the new myth combining Marxism and patriotism that he was attempting to form. Vietnamese must, he said, be loyal [*trung*], but not to the king, as under the old feudal system, but to the party; they must be pious [*hiếu*], not just to members of their immediate family, but to all the people in the nation family of Vietnam.

But with coupling words things become slightly more complicated than the above analysis suggests because many have two meanings: a non-idiomatic meaning, which emerges when the two halves are read separately, and an idiomatic meaning, which arises when the halves are taken as a whole. The degree of idiomaticity of coupling words varies. *Ruột thịt* [lit.: intestine flesh], which means close or intimate, is heavily idiomatic; *buôn bán* [lit.: buy-sell], which means business or commerce, is moderately idiomatic; *lâu mau* [lit.: long time-short time], asked in questions such as *Ông tới đây lâu mau rồi* [lit.: You arrive here long time short time already?] 'How long have you been here?,' is only slightly idiomatic.

Lenneberg and others have objected to the work of researchers whose conclusions about a culture are based on a literal interpretation of expressions, pointing out that many expressions that are "alive" for the foreign analyst have long been "dead"--as dead as the proverbial doornail--metaphors for the native speaker.[18] Although a foreign analyst of English might note that breakfast originally meant to break a fast, this argument runs, Americans aren't aware of this notion when they sit down to eat their cornflakes. This objection does not hold for Vietnamese coupling words and four-syllable expressions because, for Vietnamese, analysis of the meaning of the separate halves of a coupling word or expression is an accepted rhetorical technique. The non-idiomatic meaning of words is thus constantly being revived. Scholars, seeking both wisdom and rhetorical power, return to the meaning of the parts of coupling words, as Nguyễn Bé returns to the literal meaning of the parts of *chung thủy* in Illustration VIII, and as Hồ Chí Minh returns to the meaning of the parts of *gia-đình* 'family' in the following excerpt from a speech:

> *Gia đình* has an old meaning and a new meaning, a narrow meaning and a wide meaning. "Gia" is house; "đình" is the courtyard. In other words, the suggestion was one should worry only that the father and mother, wife and children in one's own house were warm and well-fed and content; if others were poor and miserable, that was of no concern. But this is selfish, not right.
>
> According to the new meaning, *gia đình* is wider. It includes, for example, one's fellow workers in a factory, in an agency, in a village cooperative--all these people must come together and love each other like brother and sister in one *gia đình*. Understood in an even wider sense, *gia đình* includes all the people in the country...[19]

The original non-idiomatic meaning of coupling words is also restored when speakers and writers split a coupling word (as Hồ Chí Minh splits *trung hiếu* in Illustration IV) and then use the halves as pivotal weights to balance a longer expression.

But even if the speakers of a target language seldom recapture the original, non-idiomatic meaning of a word, students attempting to learn that target language should not be discouraged from seeking it out, as much can be learned in the search. The knowledge that our ancestors thought of eating in the morning as breaking a fast, whereas Vietnamese conceived of it as *ăn cơm sáng* [lit.: eat rice morning], is not trivial information; it could lead the student to explore some interesting cultural and linguistic differences.

In any event, the question of whether teachers should or should not encourage students to dwell on the literal meaning of expressions is an academic one: students will dwell on it whether we want them to or not. Anyone reading second language texts will inevitably read expressions literally on the first encounter. In learning to become a fluent reader of a second language, one must move from a consideration of the literal meaning of idiomatic expressions to an understanding of the degree of idiomaticity they have assumed, and then proceed from this understanding to an awareness of the myths they evoke in the minds of native speakers.

What constructions in English correspond to Vietnamese coupling words? Multi-word verbal expressions such as *to put up with*, *to get ahead*, *to drop out*, *to fall in love*, and *to run for office* are similar in many respects. Like Vietnamese coupling words, many have an idiomatic meaning. The meaning of *to put up with*, for example, cannot be deciphered by considering its parts. They are also like coupling words in that the degree of idiomaticity varies greatly from expression to expression. *To run for office*, for example, is idiomatic, but less so than *to put up with*; at least its individual elements are useful clues to its idiomatic meaning.

When foreign students of English encounter idiomatic multi-word verbal expressions, they have to learn to consider them as conceptual units. If they know in which syntactic positions idiomaticity often occurs, they will not be surprised when they encounter it in those positions and thus should be able to quickly readjust an erroneous meaning prediction. For example, foreign students may at first reading understand the sentence *He decided to feel out the committee and get its reaction to the proposal* literally, but if they are prepared to encounter idiomaticity in multi-word verbal expressions like *to feel out*, they should be able to backtrack quickly and locate the cause of their miscomprehension. Similarly, Americans can read Vietnamese much more fluently if they are prepared for idiomaticity in two-syllable coupling words and four-syllable expressions. In reading the Vietnamese text of Illustration VI, I came across a sentence containing the words *trêu hoa ghẹo nguyệt*, which mean to tease flowers, to bother the moon. The passage was about a scholar who stopped off at a tavern after failing his exams. Nothing yet had been said about flowers or the moon, so I was confused until I realized *trêu hoa ghẹo nguyệt* was a four-syllable idiomatic expression meaning to flirt with or court a girl.

Like Vietnamese coupling words and expressions, English multi-word verbal expressions also evoke myths. Expressions such as *to get ahead*, *to drop out*, and *to fall in love*, in addition to conveying an idiomatic meaning, also refer to conventional knowledge shared by members of American society. *To get ahead*, for example, evokes a philosophy of life as clearly as does the Vietnamese coupling words *trung hiếu* or *chung thủy*. The multi-word verbal expression *to fall in love* evokes knowledge in a native speaker which is much more extensive than simply the understanding that *fall* is to be taken figuratively.

In conclusion, I think that we who teach ESL reading classes should be aware that how students whose native language is not English write or read texts depends a great deal on how their native language predisposes them to perceive situations. Both Kenneth and Yetta Goodman and Frank Smith have shown that "reading is only incidentally visual,"[20] that the knowledge crucial to reading lies "behind the eyeball."[21] Readers who read texts in their own language will do so, they suggest, because they know what to expect. It is reasonable to assume that readers who have trouble reading texts in a second language falter because they have not yet developed a new set of expectations. If this assumption is correct, examination of what the second language reader brings to texts in the form of predispositions and expectancies should be an important part of reading research.

Goodman stresses that good readers make predictions that they later confirm or revise, but he does not always make clear on what basis fluent readers make these predictions. His semantic cue system encompasses the entire experiential and conceptual background of the reader. The knowledge that may feed into the reading process is unquestionably vast, but it also must be organized in some way--in terms of frames or scripts or myths. Further exploration of how a reader's prior knowledge is categorized, and of the ability of short expressions such as Vietnamese coupling words and English multiword verbal expressions to evoke larger units of conventional knowledge, seems timely.

Finally, I think we as teachers of ESL reading should include more presentations on etymology and idiomaticity. At the very least, discussion of these topics should provide the student with a mnemonic crutch to aid in vocabulary retention. But it also should improve students' reading ability, and for advanced students, it can turn into a fascinating course in the history of the culture of the speakers of the target language.

NOTES

[1] I would like to acknowledge the assistance of Professor Alton L. Becker, Department of Linguistics, University of Michigan, who helped me think through many of the issues discussed in this paper.

[2] See "Lạc Long Quân and Âu Cơ" in *Beyond the East Wind*, a collection of Vietnamese folktales translated by Dương Văn Quyền and Jewell R. Coburn, illustrated by Nena G. Ullberg (Thousand Oaks, Calif.: Burn, Hart and Co., 1976), pp. 7-11.

[3] "Thư gửi thanh niên" 'A letter for young people,' 2 September 1965, reprinted in *Bàn về Công Tác Giáo Dục* 'Discussing Action in Education' (Hànội: Nhà Xuất Bản Sự Thật, 1972), p. 93.

[4] *Kim Vân Kiều* was written by Nguyễn Du. I am quoting here from Huỳnh Sanh Thông's excellent translation, *The Tale of Kieu* (New York: Vintage Books, 1973), pp. 52-53.

[5] Diên-Hương, *Phép Làm Thơ* '*Rules of Poetic Composition*' (Saigon: Khai-trí, 1961), pp. 39-40.

[6] Phạm Quỳnh, "Nghĩa vụ là gì?" 'What is duty?,' in *Thượng-Chi Văn Tập I* 'A Collection of the Writings of Thượng-Chi (Phạm Quỳnh's pen name)' (Saigon: Bộ Quốc-gia Giáo-dục, 1962), pp. 9-16.

[7] Nguyễn Bé translated his essays and compiled them in a work called "Study of the New Essence of Life: Chung Thủy," Saigon, ca. 1969. (Mimeographed.) The passage quoted is from this work, pp. 10-11.

[8] Quoted by Hoàng Văn Hành in "Suy nghĩ về cách dùng thành ngữ qua văn thơ của Hồ Chủ Tịch," 'Reflections on the way Chairman Hồ used idiomatic expressions,' *Ngôn Ngữ* 3 (1973):11.

[9] Benjamin Lee Whorf, "The Relation of Habitual Thought and Behavior to Language," in *Language, Thought & Reality: Selected Writings of Benjamin Lee Whorf*, ed. John B. Carroll (Cambridge, Mass.: MIT Press, 1956), p. 148.

[10] The additional requirement of topographical equivalence is what distinguishes Vietnamese couplings from the couplings Levin finds in English

poetry. In Levin's approach, two elements do not have to occupy the same physical location in their respective phrases to make a coupling. See Samuel R. Levin, *Linguistic Structures in Poetry* (The Hague: Mouton, 1962), pp. 30-41.

[11] The notion of "thought-mass" comes from Louis Hjelmslev, *Prolegomena to a Theory of Language* (Memoir 7, Indiana University Publications in Anthropology and Linguistics) (Baltimore, 1953), pp. 29ff.

[12] Quoted by Nguyễn Đình Hòa in "Parallel Constructions in Vietnamese," *Lingua* 15 (1965):133.

[13] Teun A. van Dijk, "Semantic Macro-Structures and Knowledge Frames in Discourse Comprehension," in *Cognitive Processes in Comprehension: Proceedings of the XIIth Carnegie-Mellon Symposium on Cognition*, eds. Patricia Carpenter and Marcel Just (Hillsdale, N.J.: Erlbaum, 1977), p. 21.

[14] Roland Barthes, *Mythologies*, trans. Annette Lavers (New York: Hill and Wang, 1957), p. 120.

[15] Ibid., p. 26.

[16] Ibid., p. 118.

[17] Ibid., p. 118.

[18] Eric H. Lenneberg, "Cognition in Ethnolinguistics," *Language* 29 (1953):465-66.

[19] Quoted by Cù Đình Tú in "Tìm hiểu cách Hồ Chủ Tịch giảng giải các khái niệm cho quần chúng," 'Exploring Chairman Hồ's style of explaining his views to the people,' *Ngôn Ngữ* 2 (1973):32-33.

[20] "Reading Is Only Incidentally Visual" is the title of an article by Paul A. Kolers. It appears in *Psycholinguistics and the Teaching of Reading*, ed. Kenneth S. Goodman and James T. Fleming (Newark, Del.: International Reading Association, 1969), pp. 8-16. See also Kenneth S. Goodman and Yetta M. Goodman, "Learning About Psycholinguistic Processes by Analyzing Oral Reading," *Harvard Educational Review* 47 (1977):332, and Frank Smith, *Comprehension and Learning: A Conceptual Framework for Teachers* (New York: Holt, Rinehart and Winston, 1975).

[21] Frank Smith, *Understanding Reading* (New York: Holt, Rinehart and Winston, 1971), pp. 68-79.

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